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M. NÉNOT,

ARCHITECT OF THE NEW SORBONNE, THE MONUMENT TO KING VICTOR EMMANUEL, ETC.

WHATEVER the future may have in store for M. Nénot, the French architect, who is still young and full of energy, it cannot be expected that he will ever place to his credit another achievement of such capital importance as the New Sorbonne, recently completed, and it is, therefore, very natural that, in entering upon a study of that gentleman's works, we should give the said edifice the first and foremost place.

His task has been a bigger one than any other that could be mentioned among the more recent creations in architecture and construction. To cover a superficial area of twenty-one thousand square meters, to group together and fit up in an appropriate manner the extensive and diversified premises requisite for a Faculty of Letters, a Faculty of Science and a School of Charters, and this in accordance with requirements ever on the increase and the constant improvements that are being suggested by modern science—all this, we say, assuredly demanded not only an architect's scientific knowledge, but also a mind always on the alert. These qualities are combined in M. Nénot to a high degree, and it was a very fortunate thing, from a public point of view, that he secured first place in the competition which was held for the reconstruction of the Sorbonne. Competitions are sometimes risky, and in many cases the result causes a good deal of astonishment; but, in the present instance the selected plan and its author were not destined to turn out inadequate, or give rise to the slightest disappointment. A pupil of the Ecole des Beaux-Arts, winner of the Grand Prix d'Architecture, and as such sent to Rome to study at the nation's expense, the author of a res-

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toration, very skilful and as complete as the actual state of the excavations allowed, of those famous sanctuaries which were the splendor of ancient Delos, M. Nénot had already acquired a certain reputation—at least, in the world of archæologists and architects—and the competition which was instituted by the City of Rome for the erection of a monument in memory of King Victor Emmanuel placed him at a stroke in the very first rank. His plan, which was loftily conceived and of triumphal aspect, being, in fact, such that a Cæsar could not have longed for anything more magnificent, succeeded in securing a majority of votes. The honor was all the more striking as the jury, composed of Italians, could not have been animated by any great sympathy for a French architect. This scheme for a monument to a gallant king was fated to remain a dazzling vision (no doubt M. Nénot had been under no delusion on that point). Fortunately, the project for a new Sorbonne appeared, escorted by the millions of francs which the State and the City of Paris, fraternally associated, provided with an unstinting hand. Before he had reached the age of thirty years, M. Nénot realized this dream of a vast edifice, the child of his brain, which was to spring up docilely out of the ground and take its place in the full sunshine.

The scheme of enlarging the Sorbonne originated long ago. As far back as the year 1853 there was laid, with great pomp, a first stone to which was never added a second. The Minister of that day appointed this memorable event as a theme for the Latin verses in the great annual competition between the cleverest pupils of all the Paris colleges. It was a pitiful comedy, indicative of a government fonder of hollow parades than of sincere and genuine progress. It is to the honor of the Republic that it has builded more and better.

The vast buildings composing the New Sorbonne are bounded by the rues Saint-Jacques, Cujas, Victor Cousin, de la Sorbonne (which is a continuation of the rue Victor Cousin) and the rue des Ecoles. The principal front borders the last-named street (Fig. 1). We will begin our inspection there. The central forepart, slightly jutting out, has five arcades flanked by two doorways with frontons. The lofty upper floor has high mullion-windows framed in half-imbedded Corinthian columns, and is surmounted by an attic story with allegorical figures standing in a perpendicular line with the columns. These figures represent Archæology, sculptured by Paris; Philosophy, by Largepied, a sculptor of talent deceased at an early age; Geography, by Marqueste; History, by Cordonnier; Mathematics, by Suchetet; Physics, by Lefeuvre; Natural Science, by Carlier, and Chemistry, by Injalbert. The two curved frontons on the right and left of the attic

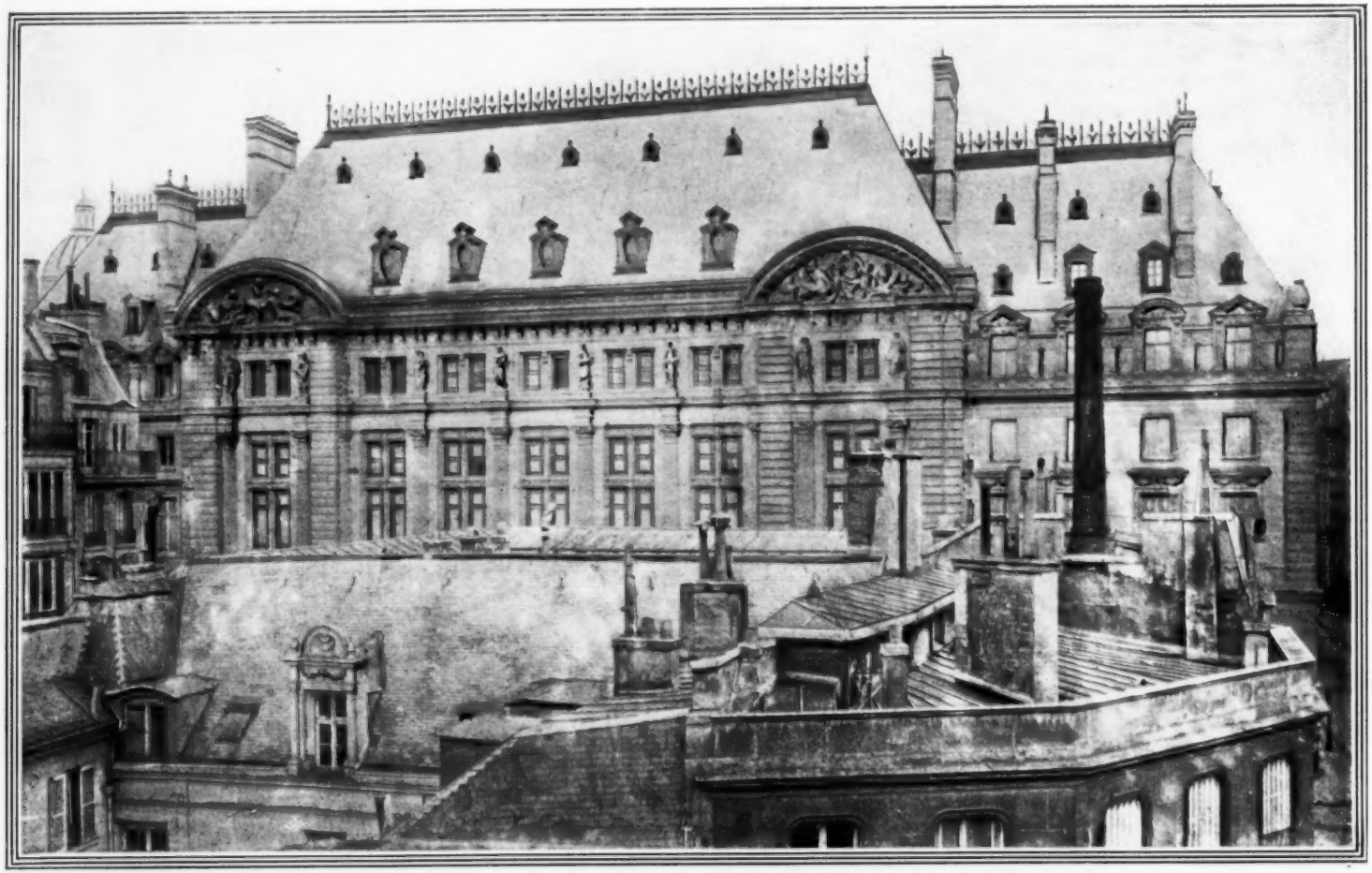


FIG. 1. PRINCIPAL FACADE OF THE NEW SORBONNE, RUE DES ÉCOLES, PARIS.

FIG. 2. VESTIBULE AT THE MAIN ENTRANCE TO THE NEW SORBONNE.

are ornamented with allegories of Literature and Science chiseled by Chapu and Mercié.

After crossing the threshold, we find ourselves in a vestibule 200 feet long by 12 feet in width (Fig. 2). The solidly supported vault is of sober architecture, but has a good appearance. Five wide arcades correspond with those outside. The last two form niches, in one of which is a statue of Archimedes, typifying Science, and in the other a figure of Homer, the supreme personification of Letters (Fig. 3). The former is by the deeply-regretted sculptor, Delaplanche, and the latter by Falguière. In front of us

Fig. 3. Statue of Homer in the Main Corridor of the New Sorbonne.—Sculptor, Falguière.

is the principal entrance to the grand amphitheatre. This entrance is closed by a gate of bronze and forged iron (Fig. 4).

Those whose recollections carry them back even but a few years remember, not without bitterness, the large amphitheatre of the old Sorbonne, in its desolate ugliness, its plaster figures of great men, and especially its cruelly narrow benches; and the sufferers of those days unite in a song of praise to M. Nénot when they take their places on seats comfortably provided with backs in the new amphitheatre, which is at the same time spacious, commodious and magnificent. This amphitheatre provides room for an audience of three thousand persons, distributed in what we

will call the orchestra (for comparison with the antique theatres is necessary here), on the benches, rising in tiers all round, and in the five galleries, and everyone present is able to listen to the lecturer in ease and comfort. The hall is forty meters wide from the bottom of one gallery to the other, and thirty-five meters long. Its cubic space is 13,600 meters. The heating and ventilation have necessitated a depth of twelve meters. Before the entrance of the audience, heated air is sent into the hall so as to warm the walls and form a zone of warm air extending to the central skylight. The ventilation hatches are then reversed and air at a maximum temperature of 16° Centigrade is sent into the hall. In this way the audience are sufficiently warmed, they breathe pure air, and yet if the hand was placed at an inlet it would experience a sensation of relative coolness (Fig. 5).

The arrangement of the great amphitheatre is ingenious and commodious, while its decoration is not less happy. The immense medallions in harmoniously softened tones which crown the five galleries bear witness to the delicate taste of their author, Galland, who, though dead, is not forgotten. They are allegories of Letters, Theology, the Sciences, Law and Medicine. In niches in the massive piers which limit the galleries, are seated, like a supreme *cœnaculum* in stone, the great ancestors of the Sorbonne—Robert Sorbon, its founder and sponsor, by Crauk; Lavoisier, a victim of the Reign of Terror, by Dalou; Descartes, by Coutan; Rollin, the good educator, by Chaplain; Pascal, by Barrias, and Richelieu, the great Cardinal (more thoroughly at home here than any one else), by Lorson.

But the crowning glory of the new amphitheatre is the immense pictorial composition that occupies the whole of the end, displaying above the lecturer a calm, harmonious, and yet imposing vision of all science, all active thought, presiding as it were over every assembly and every human labor. It is not a fresco. Painting in fresco is a process, still familiar to the Italians, which it was attempted to popularize in France in the sixteenth century, but which was soon abandoned. It is, besides, a process which French painters could not employ. M. Puvis de Chavannes is only familiar with the ordinary processes of painting in oil—at least, those are the ones employed by him with such consummate skill. This allegory, the largest executed in one single piece during recent years, decorates and finishes off the architectonic work without jarring upon the rest in any way. The grave and even sad poetry which it exhales is admirably suited to an edifice consecrated to studies of the deepest and most laborious character. Thought engenders thought. There is an absence of laughter, and even of smiles, but we find in it that superb, heroic serenity which is the

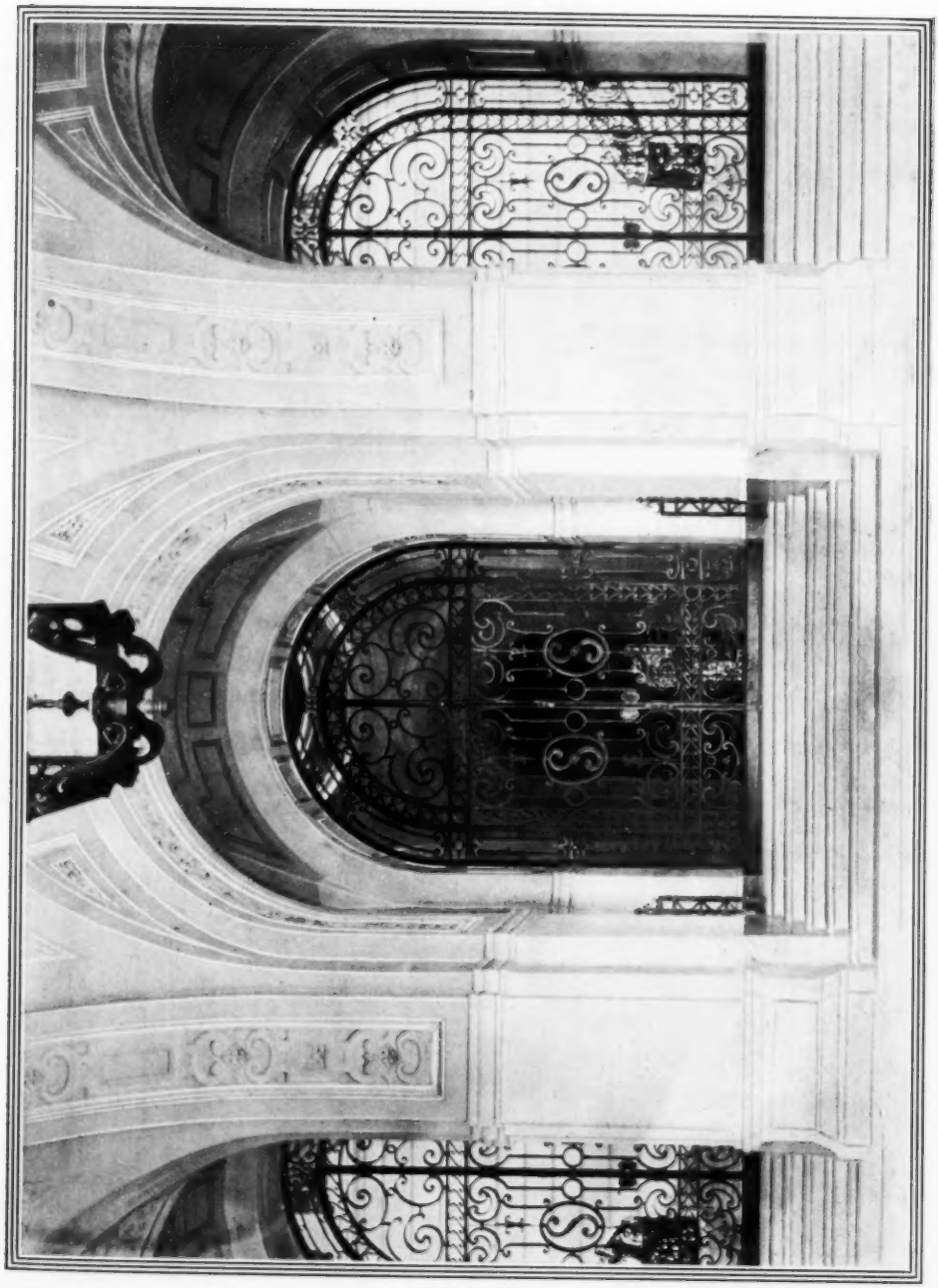


FIG. 4. GATE OF BRONZE AND FORGED IRON AT THE ENTRANCE TO THE AMPHITHEATRE.

reward of deep meditation and noble work. It may be cited as a model of intelligent decoration scrupulously appropriate to the surroundings—the frame, the very soul, if one may so speak, of the edifice which it was intended to ornament. The architecture remains predominant, as it should do, while the subordinate painting become greater and nobler, and justifies its presence, by its very fidelity to the only role proper to it.

This amphitheatre will be supplemented by a hall to be called the "Salle des Autorités," which will serve as a waiting-room for the great ones of the earth and the potentates of science who come to the Sorbonne on special occasions. This addition, however, is as yet only a project, the realization of which cannot take place until the grand courtyard shall have been completely reconstructed. In the meantime, the two staircases which lead symmetrically from the entrance to the grand amphitheatre must satisfy our dreams of magnificence (Fig. 6). Their construction, in skilfully dressed stone, is bold; the vaults, the step-grooves, the immense oval window which divides the top landing and lets a flood of light pass right down to the bottom—everything, in fact, is contrived to hold together without the aid of any deceptive metallic trussing. The forged-iron railing, set off with bronze chargings, is ornamented at intervals with the escutcheons of the French university towns. All around the upper landing there is a colonnade of monolithic shafts ornamented with Corinthian acanthuses (Fig. 7). The floor is in mosaic, while on the walls Flameng and Chartron have narrated the annals of the old Sorbonne and of French science—annals glorious and diversified above all others. The Sorbonne, which, up to the time of the Revolution, was a school of Theology, condemned Joan of Arc and would have burnt her a second time if it had been possible. It also condemned several famous books which were suspected of heresy, and intervened in the bitter and sterile quarrel between Jansenism and Molinism. But, on the other hand, the Sorbonne extended a welcome to the first printers and allowed their presses to be put up in its cellars. It gathered within its walls thinkers and writers, such as Rabelais, Amyot, Ramus and Montaigne. The great cardinal thought it worthy of his solicitude, and had it rebuilt, he himself laying the foundation stone. Later on, widening the circle of studies to which it was devoted during the earlier period of its existence, it had as masters such brilliant lights as Cousin, Arago, Cuvier, and others too numerous to mention. The historical scenes depicted on these walls denote an intelligent comprehension of the past, and some of them show a thorough understanding of decorative effects.

The Council Room occupies almost the whole of the first floor on the side of the rue des Ecoles. M Nénot wished it to be regally

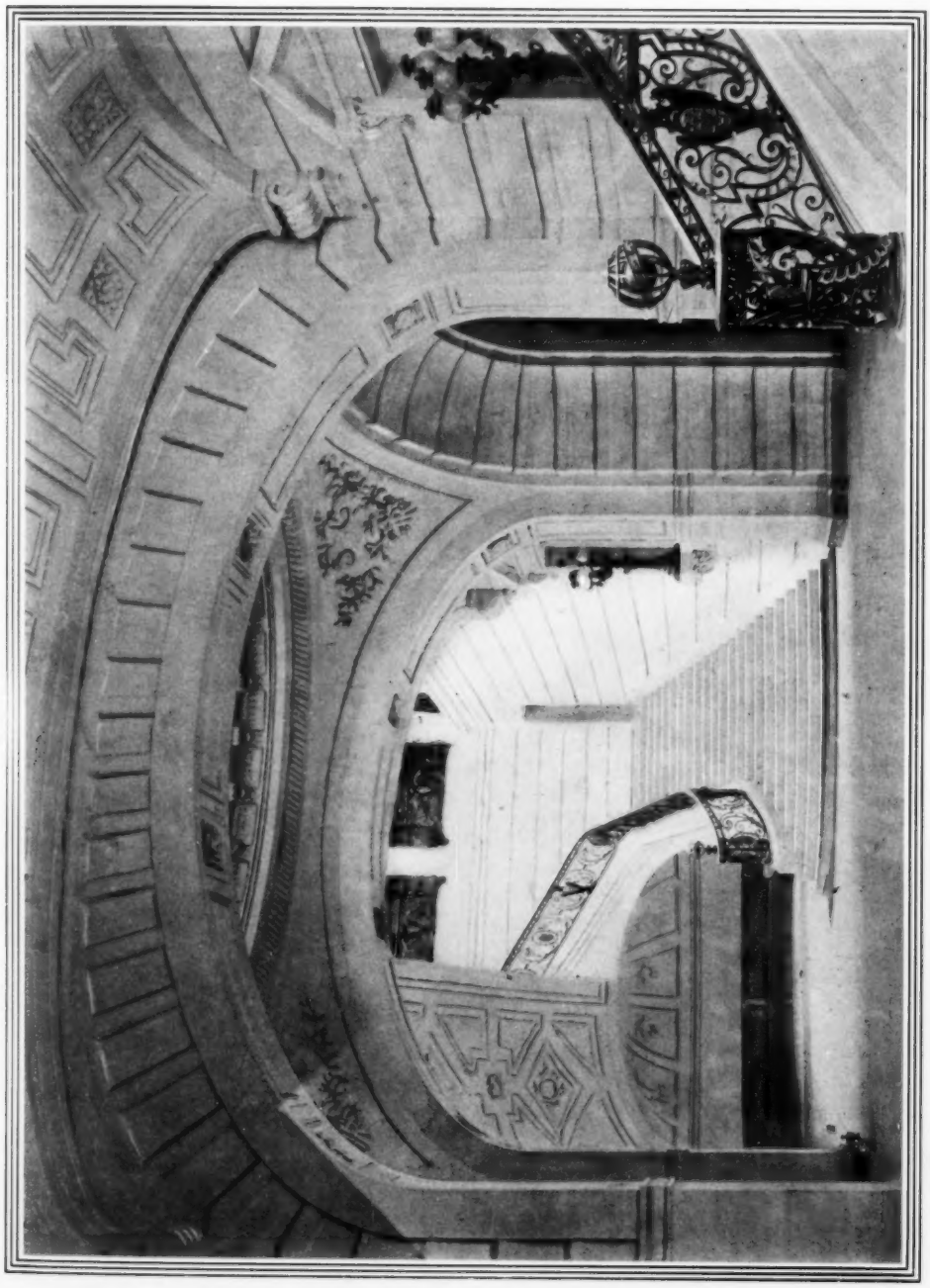


FIG. 5. THE TWO STAIRCASES THAT LEAD SYMMETRICALLY FROM THE ENTRANCE OF THE AMPHITHEATRE.

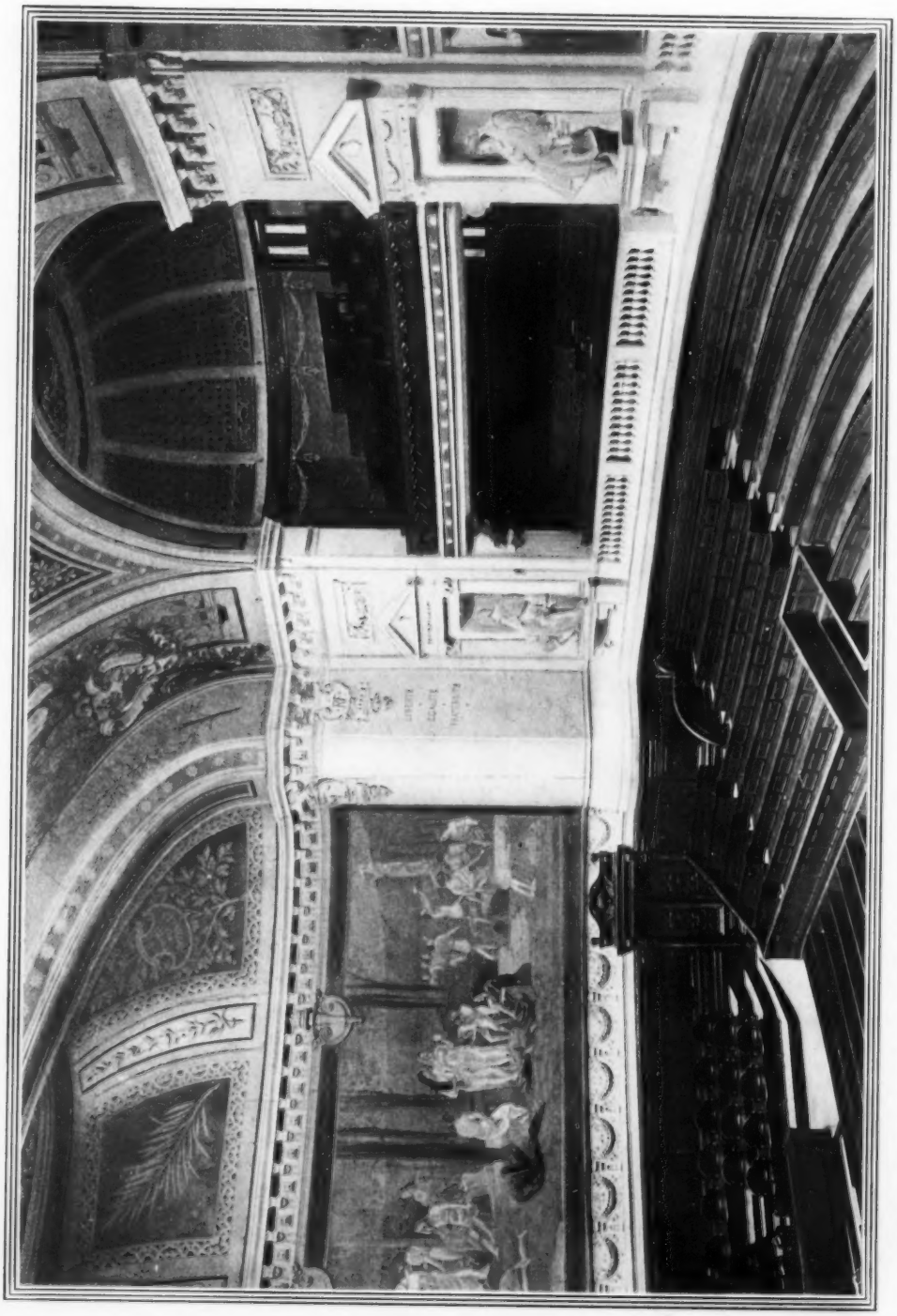


FIG. 6. THE AMPHITHEATRE OF THE NEW SORBONNE, SHOWING A PART OF THE MURAL DECORATION BY PUVIS DE CHAVANNES.

FIG. 7. "ALL AROUND THE UPPER LANDING THERE IS A COLONNADE OF MONOLITHIC SHAFTS ORNAMENTED WITH CORINTHIAN ACANTHUSES."

sumptuous. The immense ceiling is divided into compartments in the Renaissance style. On the long wall, which extends opposite the lofty windows, are grouped, under imitation colonnades, the high priests of instruction. They are all portraits, skilfully and brightly executed by Benjamin Constant. Prometheus bound, representing the past, and Prometheus unbound, representing the future, form a frame to this learned assembly.

From this spacious apartment one reaches the committee-rooms, to whose solitude animation has been imparted by Wencker and

FIG. 8. TOMB.

Designed by M. Nénot.

Lerolle. A small vestibule, soberly decorated in the Louis XVI. style, gives access to a large dining-room. Science is not averse to feasting in grand pomp on occasions. Another committee-room has already received some very remarkable paintings, which will have great historic value, for in them L'hermite has represented, ideally gathered together for experiments in physics and vivisection, Sainte-Claire Deville, Claude Bernard, and all their best known pupils.

The rector occupies, or rather will occupy, for the premises are not yet complete, a set of rooms arranged in the Sorbonne buildings, but yet practically distinct therefrom. Clairon has begun the pictorial decoration and Olivier Merson will finish it.

All that part of the Sorbonne which we have just described constitutes what may be called the state apartments. We now enter the more private portion, the portion where the principal work is done. Along the rue Saint-Jacques are situated the examination

FIG. 9. TOMB.

Designed by M. Nénot.

rooms, running one after another, and there, too, is the still unfinished Amphitheatre of Letters, a large elliptical hall which will easily seat over seven hundred auditors. Two smaller amphitheatres will form as it were satellites of the large one.

One of the competing plans for the reconstruction of the Sorbonne proposed to turn the chapel into a library. Happily this singular idea was rejected. It is in the wing which we are now ex-

FIG. 10. PRIVATE RESIDENCE ON RUE DE LÜBECK, PARIS.

M. Nénot, Architect.

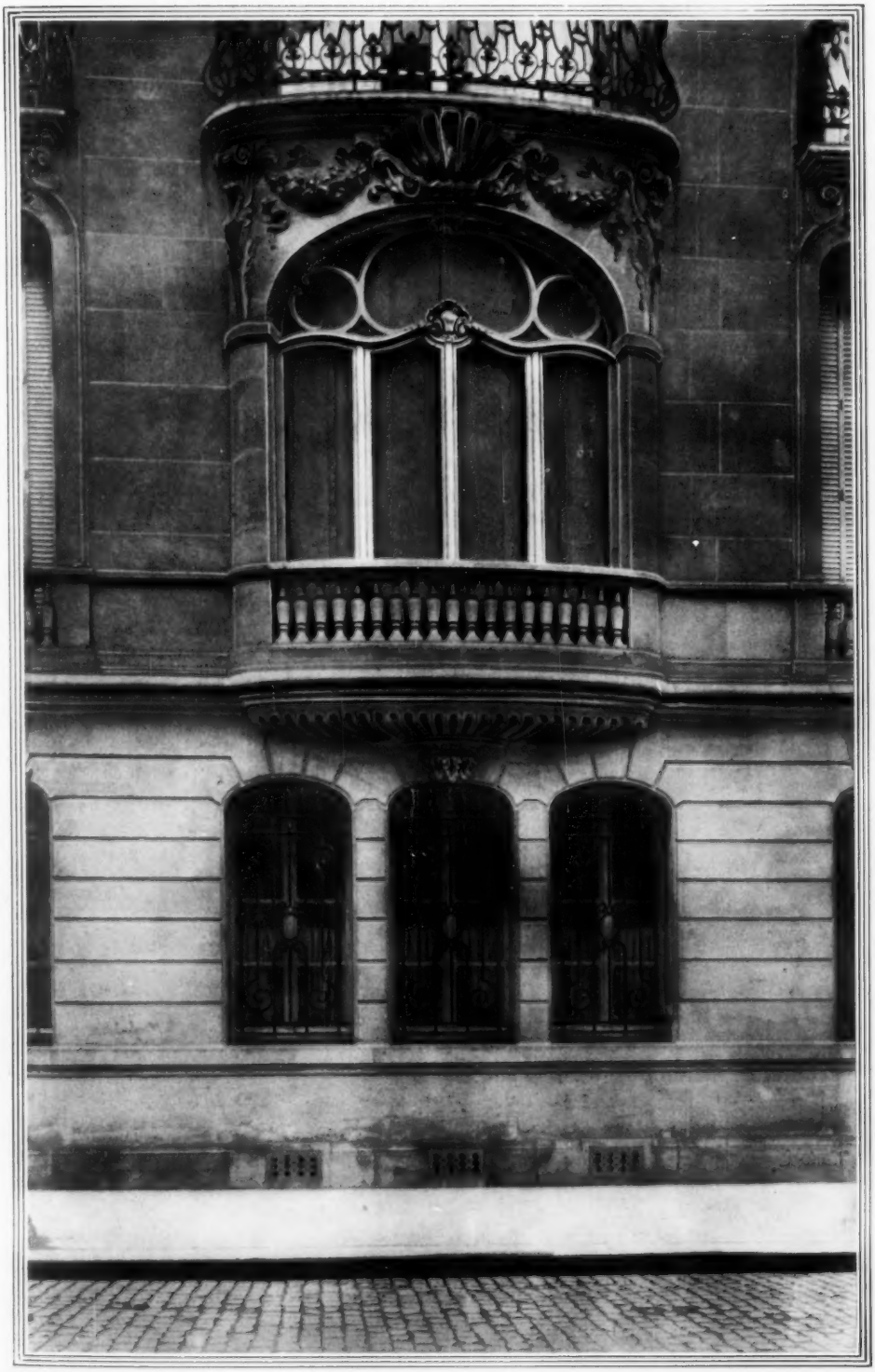


FIG. 11. DETAILS OF THE FAÇADE OF A PRIVATE RESIDENCE ON RUE DE LUBECK, PARIS.

M. Nénot, Architect.

amining that M. Nénot is preparing worthy accommodation for the unceasing inflow of books. He is providing room for at least three hundred thousand volumes, and shelves will be put up for this number. The reading-room, sixty-two meters long by ten meters in width, will only contain the books lent to readers. There are precedents for this distrustful arrangement. For instance, the very

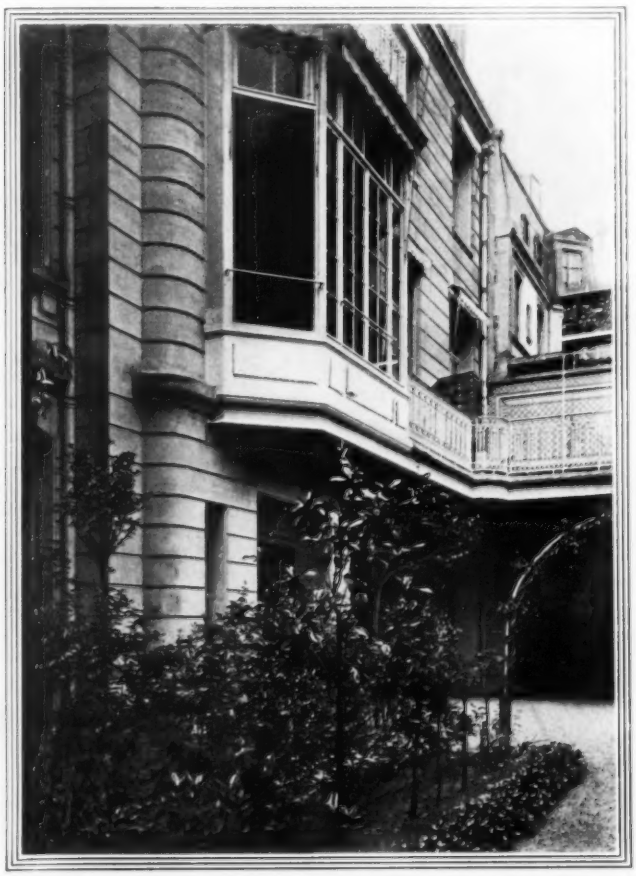


FIG. 12. COURT OF THE DWELLING ON RUE DE LÜBECK, PARIS.

M. Nénot, Architect.

fine library at Grenoble, the work of the eminent architect Questel, can only be entered by the curators, readers being kept scrupulously at a distance from it. We certainly do not look favorably on such a system. In our opinion, books ought to be the prime element in the decoration of a reading-room, as they are in all the old libraries, as Lalerouste wished them to be in the Sainte-Genevieve library, and as they are in the Bibliothèque Nationale. The purpose of a

great edifice should reveal and affirm itself in everything, down to its very ornamentation.

Literature will be spaciously and grandly lodged at the new Sorbonne. This is proper, although it was not absolutely necessary. A very modest hall was sufficient for Quinet, Michelet, Cousin and many others not less illustrious. Abelard taught in a cloister, and the garden of Academus was good enough for Plato to teach in. But it is not the same with Science, which is essentially encroaching, exacting and recklessly extravagant. The arranging of the various departments devoted to science caused the architect to

FIG. 13. VESTIBULE ENTERED FROM THE COURT OF THE PRIVATE DWELLING ON THE RUE DE LÜBECK, PARIS.
M. Nénot, Architect.

pass some restless nights, for no sooner had the plans been drawn and building operations commenced than new requirements were discovered; hitherto unthought-of laboratories were demanded, and it was even found necessary to erect a tower fifty meters high—as high in fact, including the underground part, as the towers of Notre Dame. The physicists asked for this and they got it. In another tower, visible to passers-by in the rue Saint-Jacques, there is an observatory where budding astronomers will serve their apprenticeship to the telescope. Nowhere was M. Nénot's ingenuity so largely called into requisition as in this intricate domain of science, or rather, of the sciences. Some wanted daylight and others dark-

FIG. 14. MAIN VESTIBULE TO THE DWELLING ON THE RUE DE LÜBECK.

Designed by M. Nénot.

FIG. 15. GRAND STAIRCASE LEADING FROM THE MAIN VESTIBULE OF THE PRIVATE DWELLING ON THE RUE DE LÜBECK.
M. Nénot, Architect.

ness. Some required aerial perches and others asked to be accommodated with deep cellars, while all asked for gas, an abundance of water, compressed air, mercury baths, and so forth. It was necessary to provide independent rooms for the masters, common rooms, capable of being divided up, for the pupils, and special laboratories for the preparers or for learned visitors to whom the Sorbonne extends its hospitality. Physics need apparatuses that are not used by chemistry, and the latter produces evil-smelling vapors which have to be carried off. Botany requires a hot-house, which is certainly more agreeable: it is a science of sweetness and peace. Physiology, more cruel, tortures frogs and rabbits, dogs and guinea pigs, and therefore must have kennels, stables, etc. Those creatures, called by the great Michelet our inferior brothers, have to pay with their certain sufferings for our very uncertain cures.

The photographical laboratories are especially complicated and curious. It is there that M. Lipmann juggles with the sunshine and fixes the colors, which until recently had resisted all attempts to seize them.

In summarily describing this abode of many sciences we must not omit to say that art has not been overlooked. Montenard, that painter who is so enamored of sunlight, has pictured in the Geology amphitheatre a sweetly charming corner of Provence. The less-favored Chemistry amphitheatre displays on the broad wall above the lecturer's chair what seems to be a delineation of the multicolored vapors that emanate from chemical retorts. It is affirmed to be a picture by M. Besnard representing Death giving birth to Life; but for M. Besnard's sake as well as for M. Nénot's consolation, we refuse to believe it!

Thus, the whole of this portion of the Sorbonne, from the apse of the old chapel as far as the principal door of said chapel, on the rue Victor Cousin, belongs to Science, and the arrangements and fittings, although not yet complete, show on the part of the architect, or, to use an expression employed in the Middle Ages and never more appropriate than here, the "master of the work," an amount of care and attention that is quite remarkable. Truly, one must be learned in every science, like Pico della Mirandola, in order thus to be the servant of, and provide a fit dwelling-place for all the sciences!

The School of Charters required only a very modest lodging, and M. Nénot had little trouble in giving it suitable accommodation in the immediate neighborhood of the chapel, on the spot formerly occupied by the Faculty of Theology.

The old buildings that are still standing on the rue de la Sorbonne will soon disappear and the entire reconstruction will then be complete. It is our duty, however, to record the great care that M.

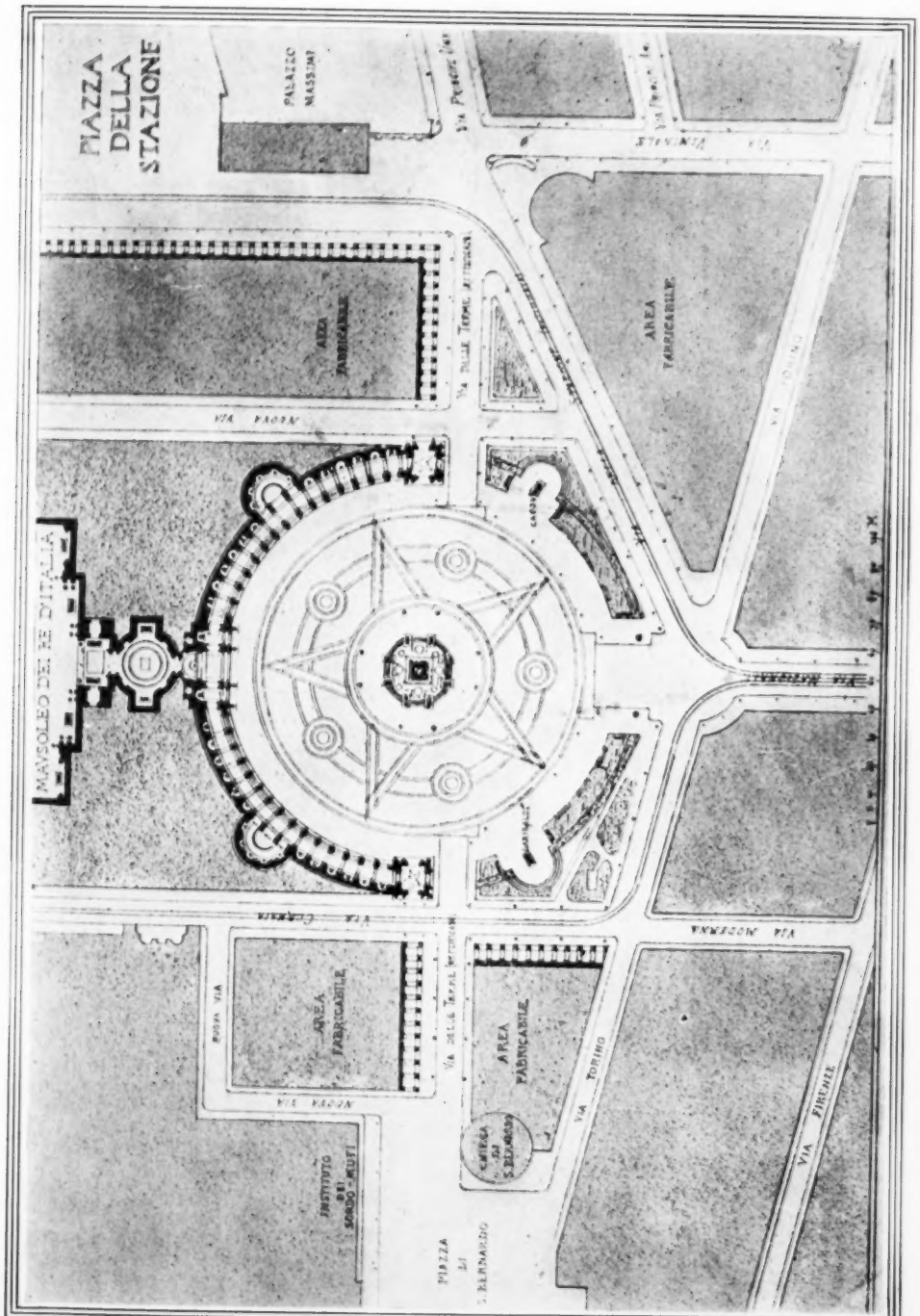


FIG. 16. PLAN OF THE PROPOSED MONUMENT TO KING VICTOR EMMANUEL I. OF ITALY. M. Nénot, Architect.

Nénot is taking, to his infinite credit, to ensure the preservation, as far as possible, of the remains of ancient buildings. In the early stages of the works, when the houses on the rue Saint-Jacques were being pulled down, the excavations brought to light some cellars dating back to the thirteenth century, which M. Nénot had striven hard to preserve. The chapel, a remarkable work by the architect Lemercier, has been the object of M. Nénot's special care. He has caused to be sealed more solidly than ever the metallic box containing Richelieu's head, which is all that remains of the great cardinal's desecrated figure. This desecration took place during the dark days of the Reign of Terror. Lenoir, curator of the museum of French historical relics, was unable to prevent it, although he literally covered Richelieu's statue with his own body, and even received a bayonet wound in the struggle. Certainly Richelieu's monument, which was by Girardon and constituted one of the masterpieces of French statuary, deserved this display of heroism in its behalf. We wonder whether M. Nénot would be capable of doing as much. We trust so. In the meantime, while waiting for an opportunity to show his courage, he has taken care of the fine wooden doors on the rue Saint-Jacques, and has already found a good place for one of them. The other will follow. The principal decorative features of the old courtyard will reappear in the new one, and we shall again see the medallions of benefactors and the sun-dial with its chariot of the god Phoebus. The steps which still divide this courtyard and make up for the difference of level will be kept. The inner front of the chapel will thus keep its pedestal and be more than ever the most majestic feature of the scene.

If old Robert Sorbon could now return to life he would certainly fail to recognize the asylum in which lodged "the congregation of the poor masters of the Sorbonne." The great cardinal himself would have some difficulty in recognizing, after these extensions, the edifice which he ordered his architect Lemercier to erect. This is the inevitable fate of things human, and especially of those that are perpetually advancing, such as things related to science. M. Nénot's work may not be an everlasting one, but he will have striven nobly to serve this century of rapid scientific progress, and the glory of his labors will remain to him enduringly.

We cannot take leave of M. Nénot without saying a few words about some of his other work—less important, no doubt, but highly creditable nevertheless. The mansion which he constructed in the rue de Lubeck, Paris (Figs. 10 and 11), recalls the excellent types of French architecture which the seventeenth and eighteenth centuries have handed down to us. The vestibule and the grand staircase (Figs. 14 and 15) are broadly conceived. The stooping figure of Venus which welcomes the caller is by no means calculated to de-

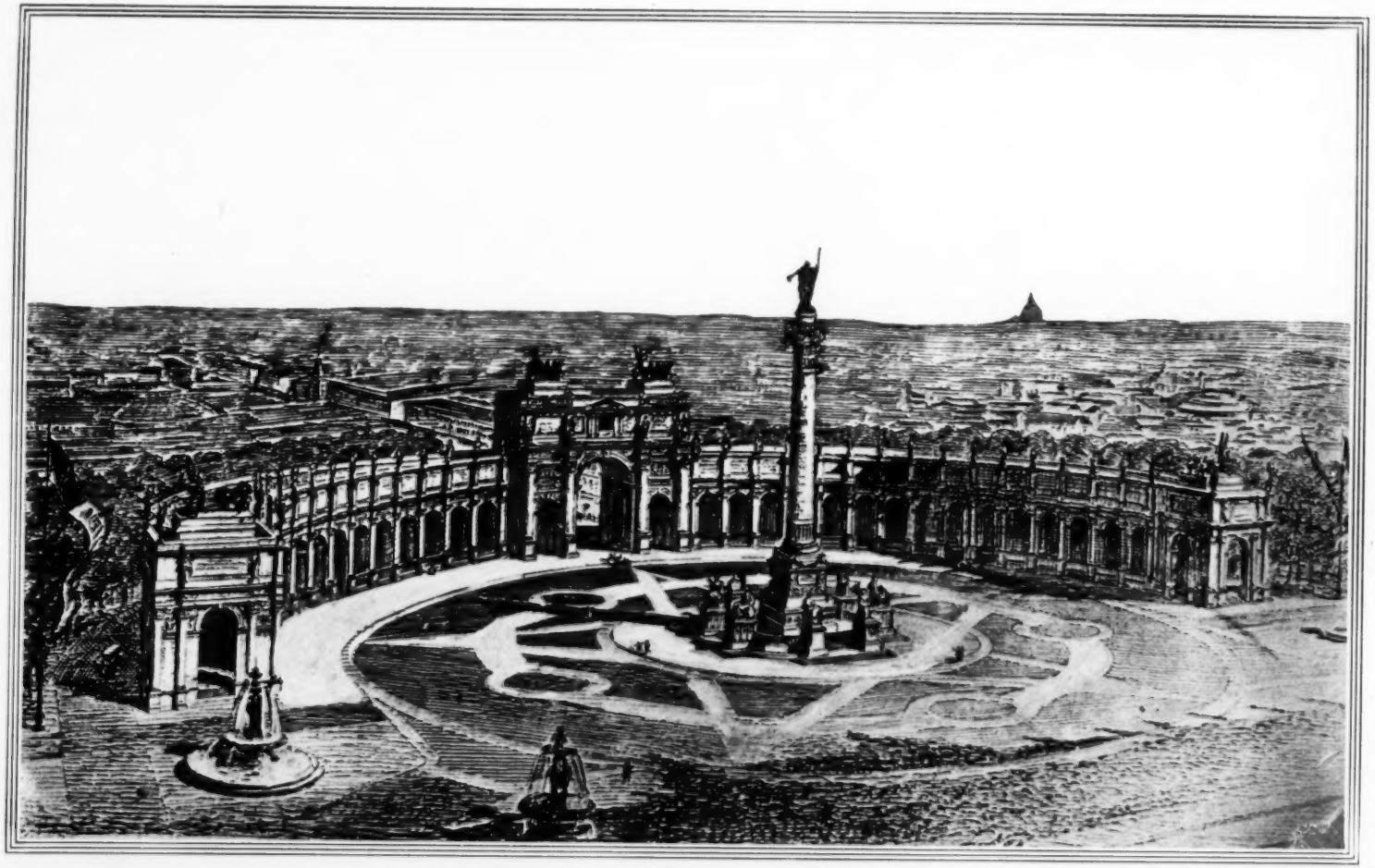


FIG. 17. SKETCH OF THE PROPOSED MONUMENT TO KING VICTOR EMMANUEL I. OF ITALY, WITH APPROACH AND SURROUNDINGS.

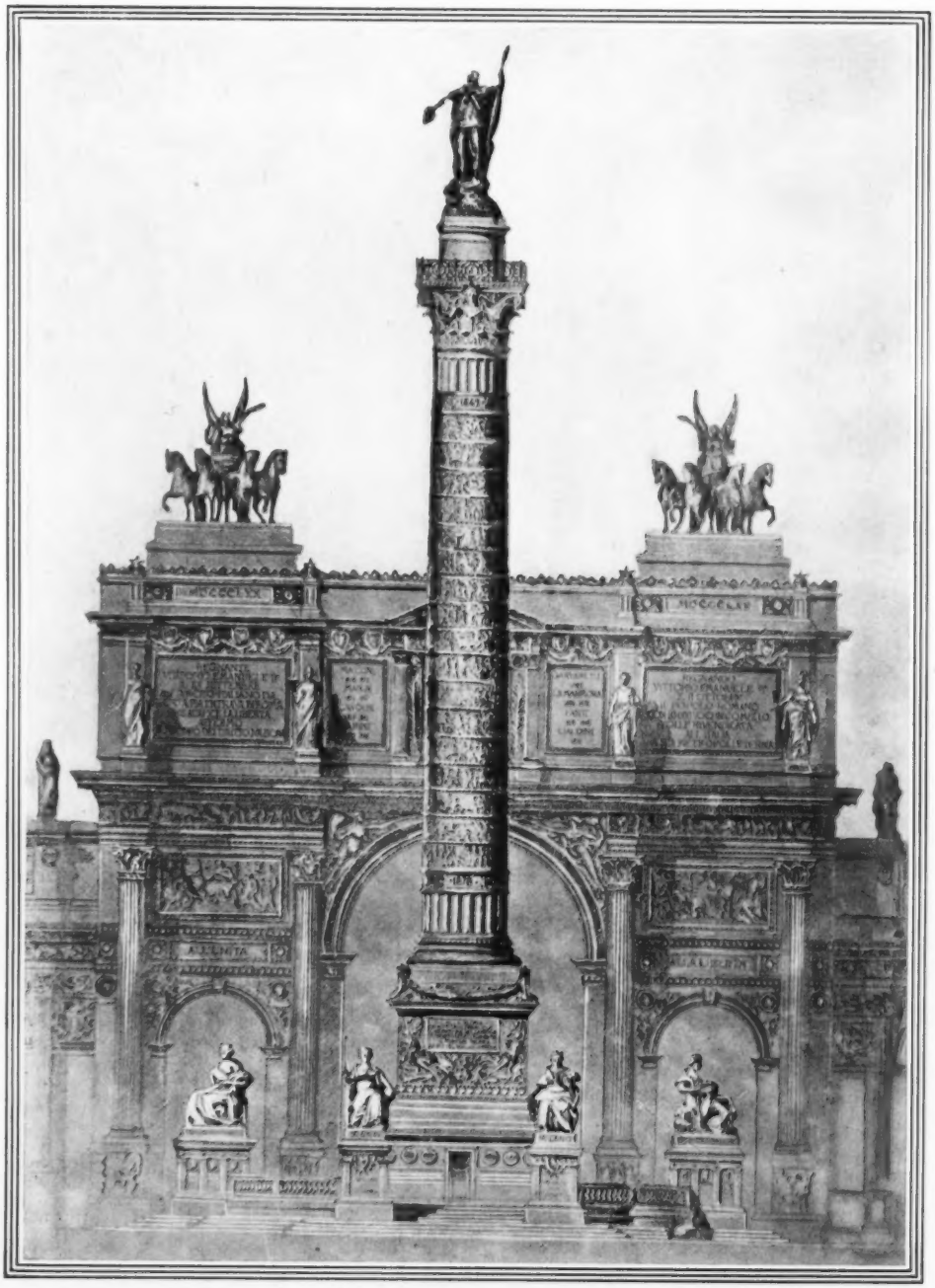


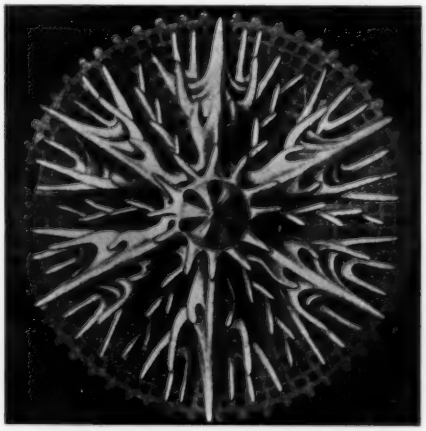
FIG. 18. ELEVATION OF THE MONUMENT AND TRIUMPHAL ARCH PROPOSED TO BE ERECTED TO KING VICTOR EMMANUEL I. OF ITALY.

press him and make his visit a dull one: on the contrary, it is likely to enliven him. The ancient Romans sometimes placed at their thresholds the mosaic figure of a savage dog and the inscribed warning: *Cave canem*, beware of the dog. At other times they put up the simple word Salve, greeting! which was certainly more amiable, although not so much so as the employment of Aphrodite herself to smile on one's friends and bid them welcome.

The dead are usually easily satisfied clients, but we know of a certain grief-stricken family who refused the spot first selected for the defunct on the ground of the horizon being too limited, and of there being no view from the point! M. Nénot's departed customers are doubtless less difficult to please; besides, he has lodged them in the best possible manner. The ancient Greeks themselves would, we believe, have looked approvingly on those Ionic columns which ornament the tombs here depicted (Figs. 8 and 9).

As we have already said, M. Nénot has had in his lifetime one beautiful dream, namely, the monument to King Victor Emmanuel (Figs. 16, 17 and 18). Assuredly, M. Nénot treated it well; porticos, a column fit to rank with those of Trajan and Antoninus, and a triumphal arch surmounted by two chariots of victory (the great Caesar himself had but one), and quite an array of statues. What a consecration! What an apotheosis! With this dazzling apparation, which was only a mirage, we will close. The subject of this article has not been able to write in marble the name of a king, as he hoped to do, but he has at least engraved on the public mind the name of Nénot.

L. Augé de Lassus.



NATURAL ORNAMENT.

FIG. 1. AN APARTMENT HOUSE IN PARIS DESIGNED BY M. LAVIROTTE AND CONSTRUCTED ABOVE THE SECOND STORY OF BRIQUE ARMÉE.

A NEW FRENCH METHOD OF CEMENT CONSTRUCTION.—PART I.

THAT building materials have a commanding influence upon architecture itself is an axiom which ought never to be forgotten, and yet it is one which is overlooked every day. The immense blocks of stone used in ancient Greece, and the stones of lesser dimensions extracted from French quarries, have furnished, the former those massive walls, those architraves and those cornices of the Greek temples, and the latter those lighter walls, that rib-vaulting and those flying-buttresses which we find in Gothic cathedrals. Neither the Italian Renaissance, nor the neo-classic, understood the deep-seated reasons which governed the existences of the architectural styles. They took certain forms, believing that these forms existed independently of the materials of which they formerly expressed the essence, and the frontons of temples made their appearance as window crownings.

One would think that the employment of iron in architecture would have brought about a revolution in forms, as it has done in processes of building, but as a matter of fact this has not been the case, for, leaving on one side the big glass-roofed halls of railroad stations, public markets, warehouses, etc., where iron stands forth in its true colors, we find that, nine times out of ten, the chief aim of the architect has been to hide the iron he has made use of, and give his edifice the appearance of a building in stone. Even in the United States, where the employment of steel has given rise to such knotty problems and such clever solutions thereof, architects, in the majority of cases, have not been able to bring themselves to proclaim to the man in the street that the skyscraper has a framework of steel: they have given these twenty-story edifices the aspect of houses built of brick and stone, which is an absurdity. (This remark does not apply to an extremely interesting building in

Bleecker Street, New York, designed by Mr. Louis Sullivan, the structure of which is not disguised, but, on the contrary, emphasized.)

After the introduction of iron and steel, now more than fifty years ago, it seemed as if architecture, enriched with a new material, would not undergo another transformation for some centuries to come; but time has not the same value in our day as it had formerly. A greater number of discoveries were made during the nineteenth century than in the thirty preceding centuries, and if we continue at a corresponding rate it may well be asked what will be left for our successors to discover. All that we shall bequeath to them is just the trouble of living!

Yet now a new process has been used during the last few years, chiefly in the building of public works, such as harbors, canals, factories, and so forth. This new process consists in the use of what the French term *ciment armé*, which is essentially composed of cement or concrete with iron wires embedded therein. Excellent results have been obtained. The conglomeration thus formed possesses remarkable strength; it does not deteriorate by contact with water or damp; the iron, buried as it is in the cement, never rusts, and, what is more, gets rid of any rust there may be upon it.

The use of *ciment armé* in the above directions having given satisfaction, a desire was felt to apply it to architectural purposes, but it seems that the new material puzzled architects a good deal. They wondered how they ought to treat the newcomer, which was not stone, nor iron, nor cement. One can easily understand their embarrassment.

We propose to examine the very interesting uses to which *ciment armé* has been put in France, from the architectural point of view. The new material has a great future before it, but if architects wish to produce work that shall really be architecture, it is necessary that they reflect before taking hold of it. With the object of providing them with food for meditation on this subject we are going to describe and illustrate here some buildings, public and private, in *ciment armé*.

* * * * *

Ciment armé lends itself to all forms. It can be moulded so as to present the appearance of a mediaeval bond or a Louis XIV. one; Gothic foliage or Roman ovolos, dentils and masks. Is it expressive in itself? This is a difficult question; but we may affirm, *à priori*, that there is nothing to be gained by copying forms invented for other materials.

In designing the house front here shown (Fig. 1) the architect, M. Lavirotte, realized the truth of the axiom which we have just

FIG. 2. AN APARTMENT HOUSE AT NO. 1 RUE DANTON, PARIS, DESIGNED BY M. ARNAND AND CONSTRUCTED THROUGHOUT OF CIMENT ARMÉE.

enunciated. He said to himself: "My material being a new one, my forms and my decoration shall be new likewise." He has certainly produced a work in "modern style." If his deeds were equal to his intentions his façade would be an excellent one; but the application is defective.

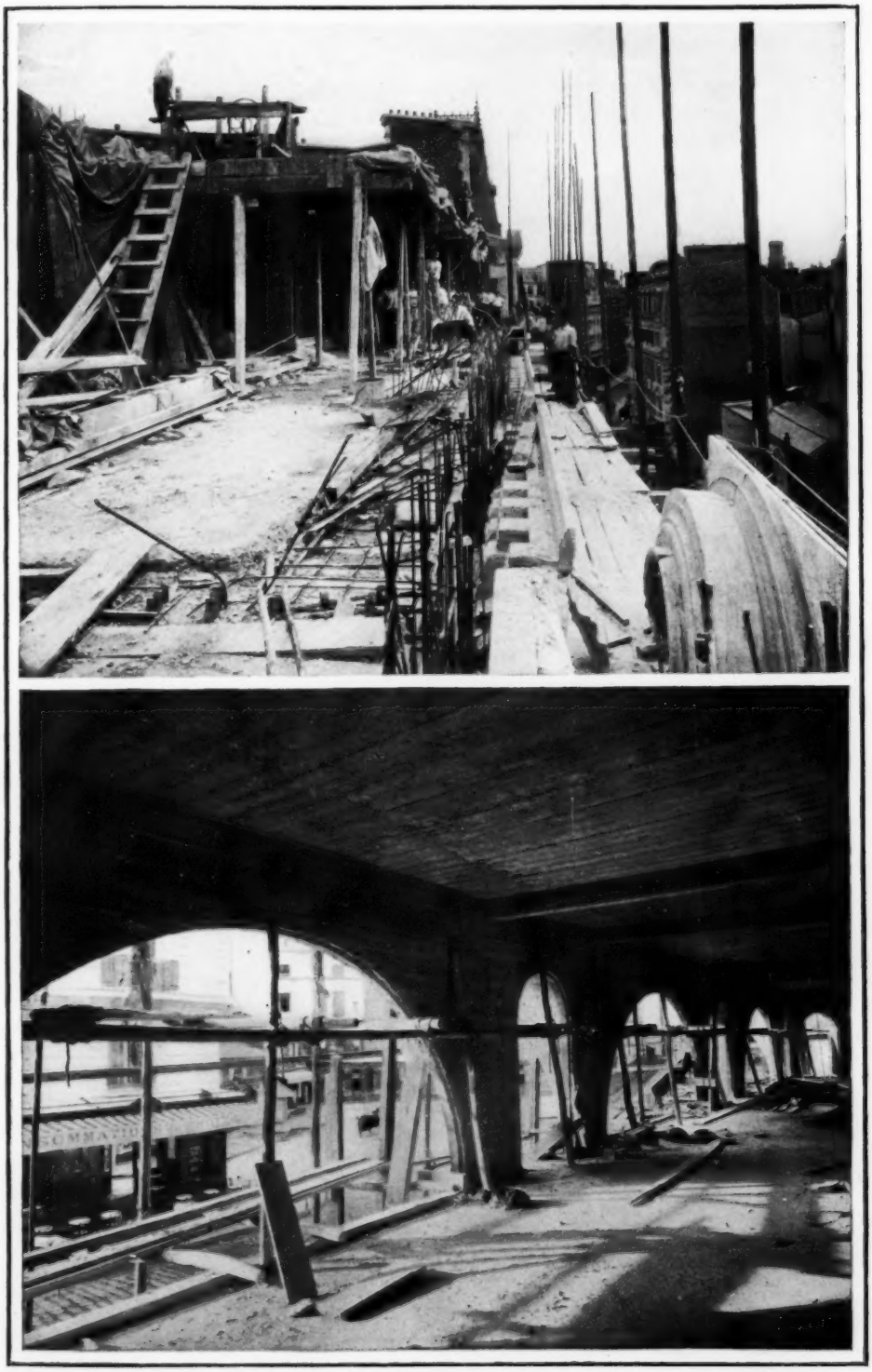
In the first place, this front is in two parts. Up to the first floor it is constructed of stone in the ordinary manner; from there upwards it is in *ciment armé*. The reason for this is not very clear. However, the upper stories alone interest us at the present moment. They are built of *brique armée*, a very ingenious way of proceeding to which we shall refer again in the course of this study. But the façade does not show this, the architect having concealed the structure of his building beneath a continuous revetment of sharp-fire enameled tiles. He has done this for the following reason. Sharp-fire enamel is a substance which is not affected in the least by damp, or heat or frost: as it is to-day, so will it be a hundred years hence. True it is expensive, but the architect thought that it was preferable to spend a certain sum at once and thereby avoid the constant expense which would be incurred to keep stone in good order. The use of sharp-fire enamel afforded an opportunity for polychromy, and this front is polychrome in the extreme.

Without quibbling about the architect's choice of colors, however, we are bound to criticise his decorative forms—not because they are in "modern style," but because they are irrational, and hence without any style at all. The enormousness of the decorative motives disconcerts us. If all this is not veneering, we should like to know the object of those Cyclopean forms—such, for instance, as the frames surrounding the third-floor windows, those bulky cornices, those massive brackets, the absurd crowning on the gallery of the fourth story, and the inordinately heavy frames round the fifth-floor windows? Why such a useless display of strength when the whole thing is only decoration? Let it be noted that I do not speak of the taste shown in the choice of these motives, nor of the puzzling design for the door, which does not rest on anything, swells out suddenly, is loaded at the top and becomes ornamental contrarywise; no, it is the conception of the ornamentation, the line of decoration adopted, which, considering the material used, I find inadmissible.

* * * * *

Turning to another house, also in Paris (Fig. 2), we meet with a more rational and more satisfactory utilization of the qualities possessed by *ciment armé*.

This building, constructed by M. Arnaud, and located at No. 1,

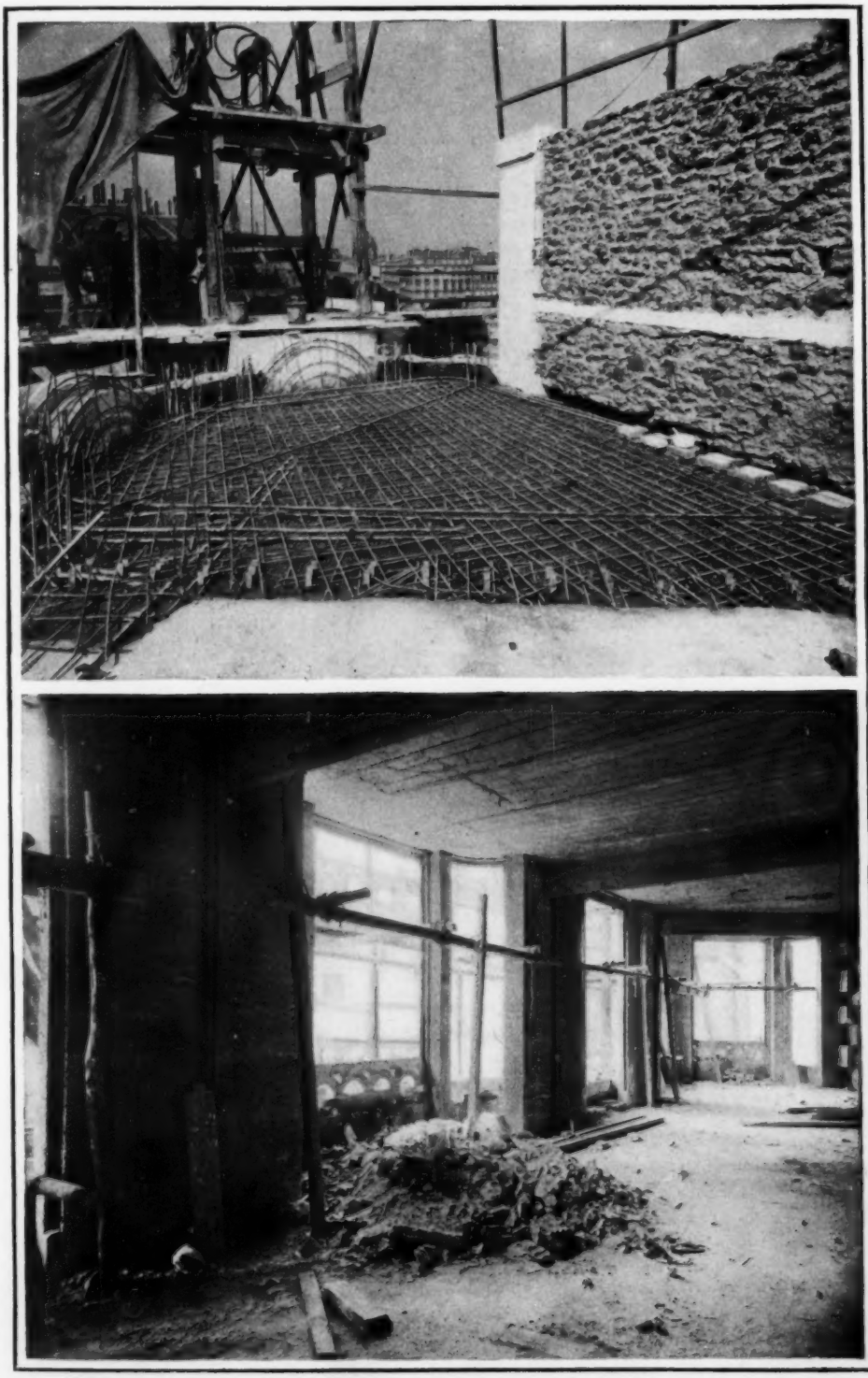


FIGS. 3 AND 4. THESE SHOW THE APARTMENT HOUSE AT NO. 1 RUE DANTON IN COURSE OF CONSTRUCTION. FIG. 3 ILLUSTRATES A MODEL FOR THE MOULD OF THE CORNICE ON THE SIXTH STORY. FIG. 4 SHOWS THE LARGE BAYS OF THE ENTRESOL.

Rue Danton, is interesting in more than one respect. To begin with, M. Arnaud has used *ciment armé* to the exclusion of other materials. Outer and inner walls, foundations and roof, staircase and ceilings; every part, in fact, is in *ciment armé*. In the next place, M. Arnaud calls upon this material to render the exact kind of service it is capable of rendering, and this enables him to economize space. It should be stated that the exclusive use of *ciment armé* as the building material for a house, according to the Hennebique process, does not effect a saving in money; there is, however, a considerable saving in ground, as will be seen, and this is a point which cannot fail to interest New York architects, who are so often obliged to build upon narrow strips of land.

The piece of ground in question is an irregular parallelogram, with a frontage of 27m. 90c. on the Rue Danton, and a blunted corner on the Place St. André des Arts, measuring 3m. 50c.; it widens gradually until at the back it has a depth of 15 meters. The difficulty of placing a set of convenient rooms on such an area as this is apparent. With the usual 50-centimeter walls the corner on the Place becomes useless. The municipal regulations require that party walls shall be built of stone and have a thickness of 50 centimeters. On the front, however, M. Arnaud was free to employ *ciment armé*, and to limit his walls to a thickness of 20c.

It has been calculated that, thanks to this manner of proceeding, and also to the thinness of the partition walls and the inside tambours, the architect has saved 10 square meters on each floor, which, for the nine stories of the building (counting the two underground), makes a total gain of 90 square meters—say 108 square yards. But this is not all. Thanks to the use of *ciment armé* for the floors, the architect has managed, whilst allowing the regular height of 3m. per floor, to give his house one floor more than the houses of Paris can have, for, as is known, the maximum height for houses is fixed by a police regulation at 31m. 30c. Thus the total gain is about 300 square meters, and this in a part of Paris where ground is worth $300 the square meter. This economy is wholly due to an intelligent utilization of the properties of *ciment armé*. The various photographs here given show the house in course of construction. After the iron wires have been placed in position the cement is poured in between planks. For the parts which have to take a special shape, wooden moulds are prepared, into which the cement is run. We produce a photograph (Fig. 3) of the mould for the cornice on the sixth story. Another photograph (Fig. 4) shows the large bays of the entresol, and another (Fig. 5), one floor between two stories, and (Fig. 6) one apartment. It is needless to say that a house built in this manner, without a single inch of wood, is absolutely fireproof.



FIGS. 5 AND 6. THESE REPRODUCTIONS ALSO SHOW THE BUILDING AT NO. 1 RUE DANTON IN THE COURSE OF CONSTRUCTION. THE UPPER ONE REVEALS THE FLOOR CONSTRUCTION BETWEEN TWO STORIES, AND THE LOWER ONE THE ROOMS OF AN APARTMENT.

As will be seen by our illustrations, M. Arnaud has resorted largely to corbels to make his rooms bigger. For the purpose of giving variety and relief to his front he has emphasized the profiles of the windows, piers, brackets, etc. An abundance of light reaches every part of the house.

A wall consisting of *ciment armé* lends itself to various kinds of decoration. There is an opportunity here for a Renaissance of those *sgraffitti* of which Germany, in the sixteenth and seventeenth centuries, made such frequent use, following in this respect the lead of Italy. Another way would be to cover the wall with sharp-fire enameled tiles. M. Arnaud has been very sparing of his decoration. A few enameled tiles on the first and fourth stories, between the windows, suffice to give a touch of color to the grey façade. It should be mentioned, moreover, that the owner of the house, M. Hennebique, who is the inventor of the process employed by M. Arnaud, desired that this building, in which he has his offices, should proclaim that it was constructed of *ciment armé* and that the new material which he was offering to the public sufficed in itself.

Jean Schopfer.

(To be continued.)

L'ART NOUVEAU.

[*"L'Art Nouveau"* is the name given by the writer of this article, M. S. Bing, to his establishment at No. 22 Rue de Provence, Paris, of which we reproduce a photograph of the principal hall. It is at this establishment that the first expositions of *Art Nouveau* have been held, and one can see there some interesting modern articles of the most varied kind—such as furniture, stuffs, jewelry, pottery, carpets, china, lamps, etc., etc. At the Paris Universal Exposition of 1900, M. Bing's exhibit of *Art Nouveau*—of which term, by the way, he is the creator and holds, so to speak, the copyright—was the most interesting one in its section, and the articles exhibited were purchased by the principal European governments in order to be placed in the national museums.—Ed.]

A FEW months ago I received by mail from the United States a prospectus issued by the inventor of a new machine—viz., "a machine for making *Art Nouveau*" (the last two words in French). I shall always regret not having preserved this precious document, or at least noted the name of its ingenious author; no doubt he would have been able to supply us with much information on the subject we are treating, since it has led him to the length of inventing a machine for turning out *Art Nouveau*.

After all, it is better, perhaps, that the name of my worthy correspondent should not be known, for he will thus serve as the incarnation of all those who form a fantastic idea of *Art Nouveau*—an idea based either upon certain extravagant criticisms they have read, or upon a view of those tentaculated, distorted, inharmonious objects which have been dubbed with this name in order to give them an "up-to-date" air. It is evidently from these criticisms and these objects that our inventor has acquired his knowledge, for in order to convey to his clients an exact notion of what the words *Art Nouveau* mean he adds this expressive definition: "French Twist."

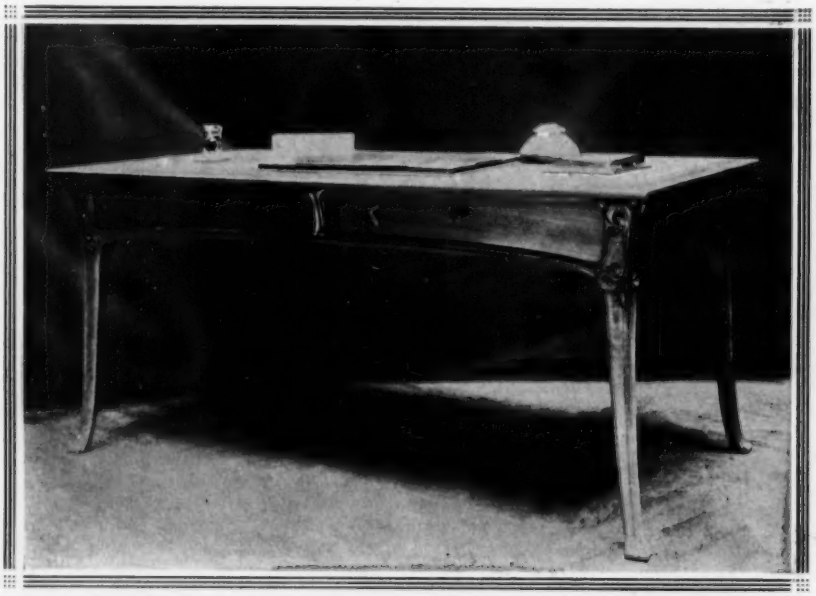
At the risk of displeasing the collectors of curious legends I seize the present occasion to relate the origin of this term *Art Nouveau*, upon which too much ridicule has been cast, and which, at the same time, has been exploited to wrong ends.

A word is nothing in itself. It chiefly represents the meaning which its author intended to give it. In the present instance this meaning has been entirely misunderstood by certain simple persons, misled by witty individuals who did not know what they were talking about. These clever people have managed to discover an intention to originate some sort of spontaneous generation in art, founded on æsthetics altogether invented—or fallen from the moon!

THE PRINCIPAL HALL IN THE BUILDING AT NO. 22 RUE DE PROVINCE, PARIS, DEVOTED TO THE EXHIBITION OF "ART NOUVEAU" WORK, AND FOUNDED BY M. BING.

L'Art Nouveau, at the time of its creation, did not aspire in any way to the honor of becoming a generic term. It was simply the name of an establishment opened as a meeting ground for all ardent young spirits anxious to manifest the modernness of their tendencies, and open also to all lovers of art who desired to see the working of the hitherto unrevealed forces of our day.

Thus the term was nothing but a title, a name, or, if you like, a sign, incapable of expressing in the two words composing it the idea which called it forth, the aim to which it tended. This idea, this aim, would be indicated more clearly—if the name of an establishment could extend to the length of a phrase—by the denomination: *Le Renouveau dans l'Art*—the Revival of Art. Even



A TABLE-DESK IN THE ESTABLISHMENT OF M. BING.

this might not suffice without commentaries. Let us try to fill the blank.

In certain branches of art, such as painting, for example, which has steadily continued its development in a normal and regular way, no revival was called for. It was only in relation to art as applied to decoration, to furniture, to ornamentation in all its forms, that the need of a new departure was felt. This department of art, in reality the most essential to man, being closely connected with his daily existence, had been at a standstill for nearly a hundred years. By a singular exception to the logical course of things, all the life had gone out of this section of human

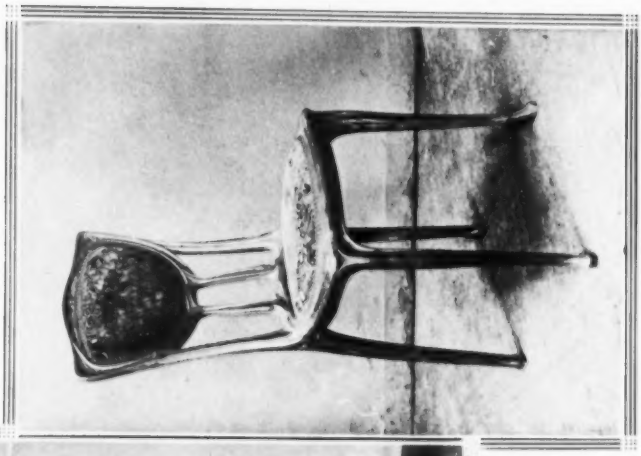
AN UPHOLSTERED CHAIR IN THE ESTABLISHMENT OF M. BING.

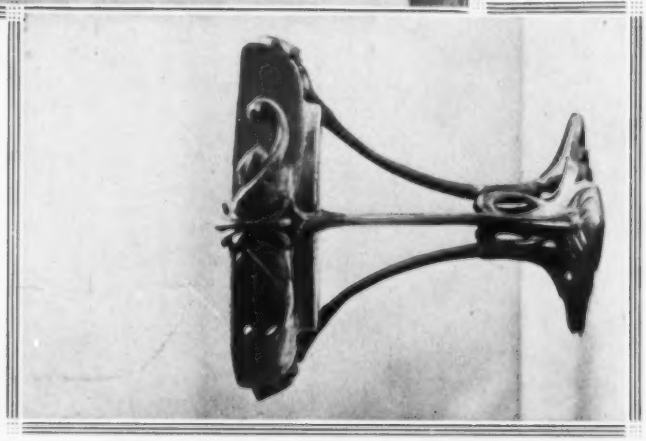
activity. It was not the repose of the Sleeping Beauty, for all around there was busy movement and constant progress, due to the quickening effect of a thousand scientific discoveries and the shake-up caused by social innovations of the most radical kind. Amidst this universal upheaval the decoration of the day continued to be copied from that in vogue in previous centuries, when different habits and different manners were current. What an astonishing anachronism!

It is difficult to conceive how several successive generations could have abandoned themselves to this inertia. However, it was impossible that the world should forever acquiesce in an avowal of such humiliating impotence. Little by little voices were raised in protest and signs of an awakening began to appear. What was lacking was a means of stimulating artists to new efforts, of establishing some connection between isolated endeavors, and of providing a suitable place for displaying the latter and submitting them to the judgment of the public.

In the beginning I confined myself to this rôle of intermediary —of standard bearer in the service of the good cause. Soon, however, the disillusion came. The productions gathered together in my establishment had a chaotic appearance. Many were faulty in conception, due to inexperience: all suffered in their aspect from a want of cohesion, due to extreme diversity of origin. The general defect was a premeditated contempt for that quality which is indispensable in a work intended to rest the eye—simplicity.

It was evident that the future of this new-born movement was in great danger. The only way to save it from total collapse was to endeavor to make it follow a fixed direction, carefully marked out; to keep it within the bounds of sobriety and good sense, avoiding the extravagances of exuberant imaginations and relying for its salvation upon these two fundamental rules. *Each article to be strictly adapted to its proper purpose; harmonies to be sought for in lines and color.* It was necessary to resist the mad idea of throwing off all associations with the past, and to proclaim that, on the contrary, everything produced by your predecessors is an example for us, not, assuredly, for its form to be servilely copied, but in order that the spirit which animated the authors should give us inspiration. Things which we call ancient were supremely modern at the time they were made. To none of our ancestors would it have occurred to look backward for the purpose of repeating what artists of former periods had invented to suit the habits and customs of their own day; but neither would he have tried to do anything more than take up the work at the point where his predecessor had left it, and in his turn develop it logically to meet the general spirit of the age in which he was living.



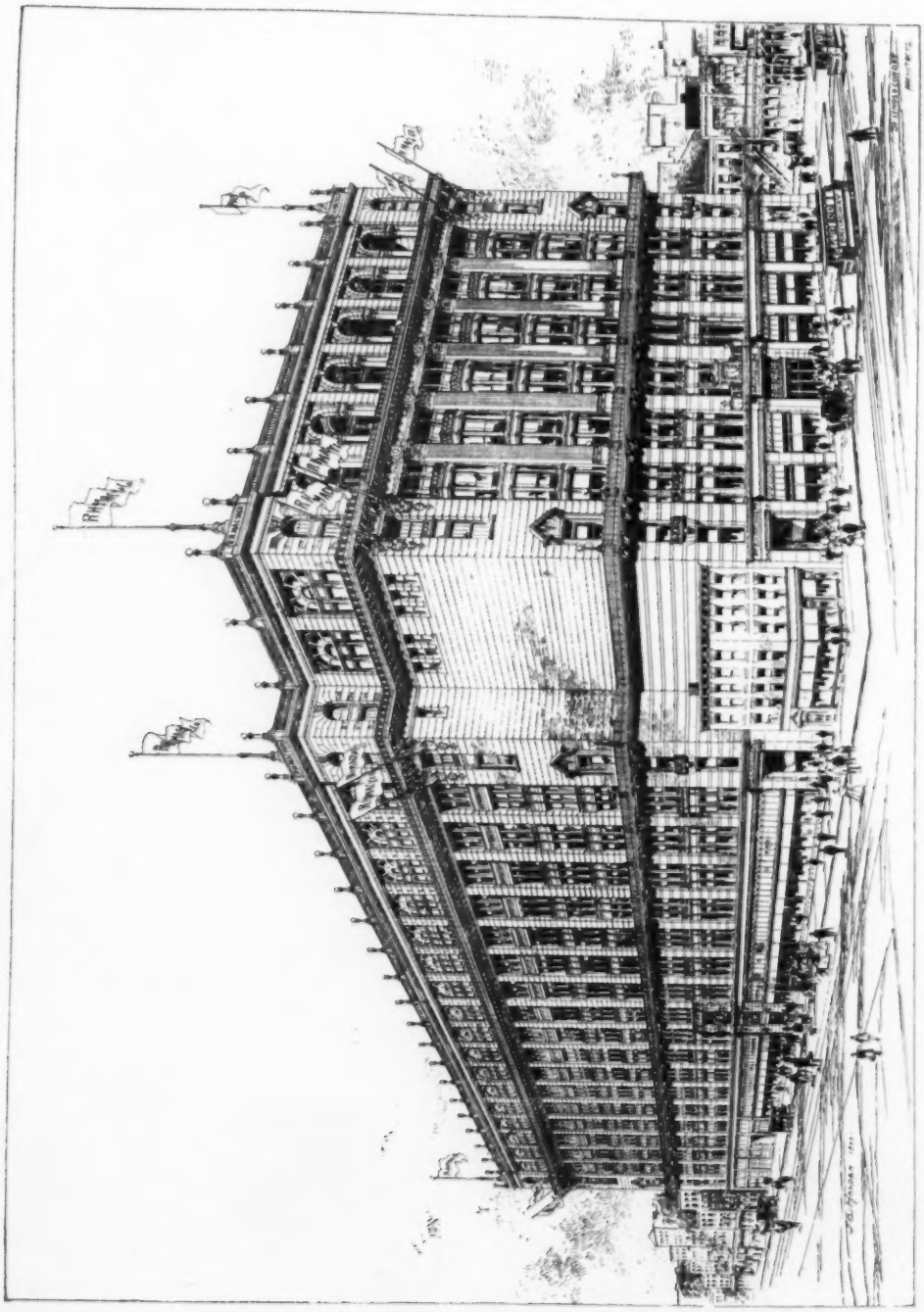


L'ART NOUVEAU CARD-TRAY, CLOCK AND CHAIR.

There was only one way in which these theories could be put into practice—namely, by having the articles made under my personal direction, and securing the assistance of such artists as seemed best disposed to carry out my ideas. The thousand ill-assorted things that I had collected together in a haphazard way gave place, little by little, to articles produced in my own workshops, according to the following program, to the exclusion of all other considerations. Thoroughly impregnate oneself anew with the old French tradition; try to pick up the thread of that tradition, with all its grace, elegance, sound logic and purity, and give it new developments, just as if the thread had not been broken for nearly a century; strive to realize what our distant predecessors would do if they were alive to-day—that is, enrich the old patrimony with a spirit of modernness, bearing in mind the eternal law which ordains that everything which fails to keep progressing is doomed to perish.

Far be it from me to imagine that nothing good can be produced except in the way which I conceive to be the right one. In the wide field now open each of us can sow his seed according to the fruits he wishes to gather. The only danger lies in the growth of rank weeds, impudently thrusting themselves to the front and choking the tender young plants just springing up. By "rank weeds" I mean all those crude imitations, shaped without regard to the most elementary rules of logic and given the name of "Art Nouveau;" all that parasitic vegetation which, as yet, prevents hesitating spirits from seeing that the time has come for us to shake off our foolish inertia, and that there is now no longer any reason why our decorative arts should not recover their full freedom of expansion and flourish as gloriously as they did in former times.

S. Bing.



THE NEW STORE OF R. H. MACY & CO.

Broadway, between 34th and 35th Streets, New York City.

De Lemos & Cordes, Architects.

ALL KINDS OF A STORE.

THE modern department stores are the results, for the most part, not of combination, but of accretion. There is one combination of stores that is doing business both in New York and elsewhere, but it is exceptional. The other big stores have originated in a small way, and have grown to their present huge dimensions; because they have found, little by little, that, other things being equal, it was cheaper to do business on a big scale than on a small scale. But just because these department stores have grown from the gradual extension, and in the end almost the multiplication of a business, which in the beginning occupied one or two small shops, it was not for many years that their owners erected buldings specially designed to meet the needs and exigencies of their complicated trade. As the demand for more accommodations became pressing, the proprietor of the store would add one neighboring shop after another until he came into possession of the whole block front. Later he would frequently be obliged to lease or purchase additional room across the street, and in this way obtain the larger floor space which his business imperatively demanded. The only two of the large stores doing business in New York which are now in this condition, is that of R. H. Macy & Co. and John Wanamaker. The old store of the former firm, consisting as it does of a scattered collection of heterogeneous buildings—some situated in 13th, some on 14th and some on 15th streets, some twelve and some four stories high—is an excellent example of a department store which has grown without the possibility of any systematic planning. John Wanamaker, also, finds the whole block occupied by the old Stewart store too small for his present business, which has crossed 9th street and occupied the block front on the south side of that street. A few years ago two of the largest Sixth avenue stores, viz., that of Adams & Co. and Simpson, Crawford & Simpson, were in a similar condition, and occupied buildings which had been designed for a number of small businesses, rather than one large one. All kinds of a store were situated in all kinds of a building.

But these casual methods of accommodating a business so complicated and demanding such perfect organization as that of a department store, were manifestly bound to be superseded. Moreover, from the start there were firms who controlled sufficient capital immediately to provide buildings adequate to their needs. The most remarkable instance of this fact in the history of the retail trade of New York was, of course, A. T. Stewart. He began

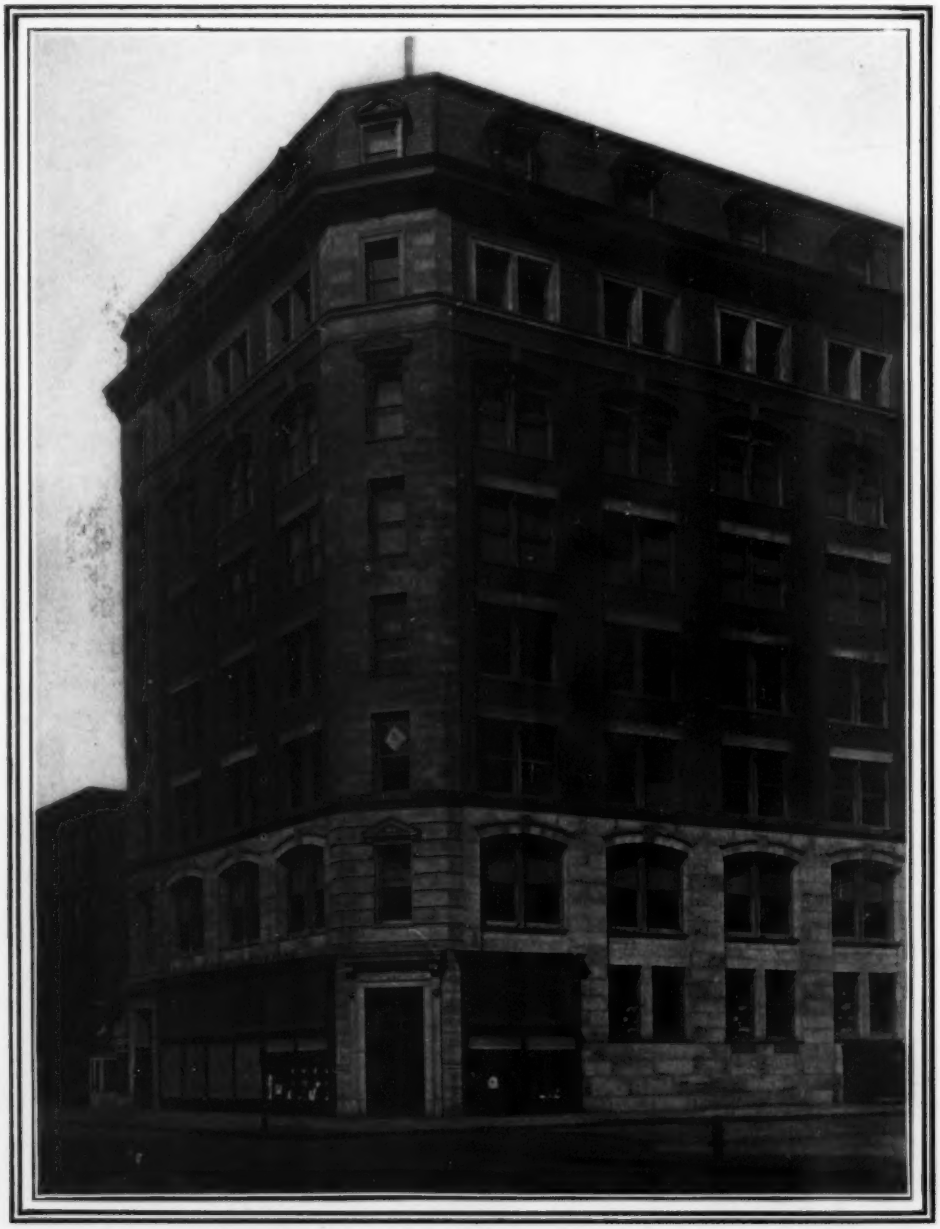
business indeed in a shop 22 x 30 at No. 283 Broadway, and for many years he shifted from place to place, renting ever larger accommodations in much the same neighborhood. But Mr. Stewart soon controlled sufficient cash to buy any accommodation his business demanded, and in 1848 he astonished New York by building the marble building at Broadway and Chambers street, at present known as the Stewart Building. This was the first example in this country of the dedication of so large a building to retail trade, and the newspapers at the period did not fail to be properly impressed. But Mr. Stewart's marble palace only sufficed for his needs some fourteen years. In 1862 he moved into the store occupying the whole block, bounded by Broadway, Ninth street, Fourth avenue and Tenth street, and this building was the first example, either in the United States or any other country, of the erection of something resembling a modern department store building. When Mr. Stewart died, in 1876, his building was still, so the New York papers stated, the largest of its kind in the world. It was proudly proclaimed to cover eight floors of 2½ acres each, to require engines developing 520 horse-power to keep its machinery going, to accommodate 2,000 employees and to have done a business (although this was an exaggeration) of some $50,000,000 in one year.

At that time, however, none of Mr. Stewart's competitors followed his example, probably because they could not afford to. His resources were immeasurably greater than those of any other storekeeper in New York, and after his death his business was not conducted in a fashion that made competing stores fear the unequal advantages, which his business enjoyed in having a building specially designed for the purpose. It was the appearance, in 1896, of a firm, Messrs. Siegel, Cooper & Co., hailing from Chicago, which stirred up the department storekeepers of New York to make their buildings as convenient as possible for a class of trade so intricate and so enormous. Before that date, indeed, many important New York stores, such as Altman's, McCreery on 23d street, and Stern's, had provided themselves with improved accommodations. But none of these buildings, while large and interesting examples of store construction, occupied a continuous frontage on three streets, and they were none of them in quite the same class as the building of Siegel, Cooper & Co., which not only covered a block front on Sixth avenue, between 18th and 19th streets, but also included 460 feet on 18th street and 460 feet on 19th street. The example of Messrs. Siegel, Cooper & Co. finally forced other important Sixth avenue firms to follow suit. In recent years Messrs. Adams & Co. and Simpson, Crawford & Simpson have built handsome structures, occupying block front-

THE NEW CLOTHING STORE OF SAKS & CO.
Greeley Square, Bet. 33d and 34th Sts. Buchman & Fox, Architects.

ages and containing all the improvements and conveniences demanded by the peculiar needs of a department store which mechanical ingenuity can suggest. More recently still, Messrs. R. H. Macy & Co. decided to move from the location at 14th street and Sixth avenue, which the firm have so long and so successfully occupied, and build a new and magnificent habitation on Greeley square, between 34th and 35th streets. The plans of this store is the outcome of all the knowledge and experience gained in the planning of the building previously erected, and in describing the kind of building which such a business as that of a modern department store requires, one is obliged inevitably to use this building more than any other as a type.

The indispensable requirements of a department store are many and various. The primary need is, of course, for a floor space



THE BROADWAY FRONTAGE OF THE NEW STORE AND LOFT BUILDING, AT BROADWAY AND 13TH STREET, NEW YORK CITY.

Clinton & Russell, Architects.

THE FOURTH AVENUE CORNER OF THE NEW STORE AND LOFT BUILDING AT 13TH ST., FROM BROADWAY TO 4TH AVE., NEW YORK CITY.

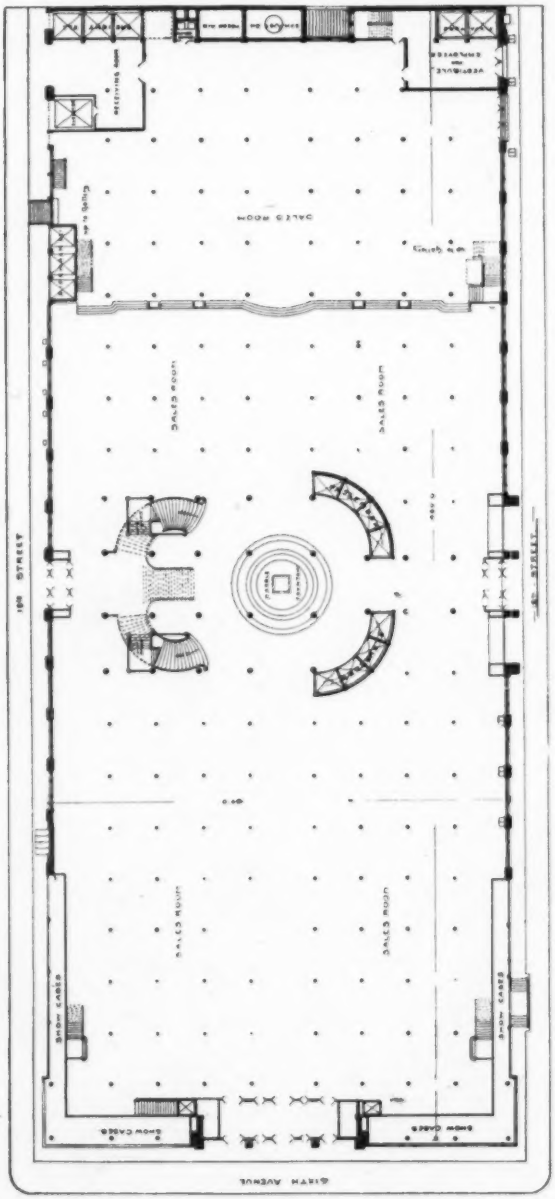
Clinton & Russell, Architects.

larger than that demanded by any other business, and this floor space cannot be divided among more than a certain number of floors. The new Macy building, for instance, has nine floors above ground and two floors below, each floor containing about 70,000 square feet. It would have been impossible for the firm to obtain the same actual floor area by doubling the number of stories and halving the area of the building, because of two reasons. In the first place it would be much too expensive, both in space and in power to supply the elevator service needed to carry the large number of customers, amounting to from 25,000 to 40,000 a day, to and from the many different floors they might desire to reach. In the second place if these customers were forced to do overmuch vertical traveling in order to make their purchases in the different departments, they would find it inconvenient; and such a disposition of space would tend, in all probability, to make them curtail their purchases. The consequence is that a department store is limited in height. Unlike an office building it cannot be profitably built higher than a comparatively low number of stories, and it is probable that the nine stories of the new Macy building represents, under present circumstances, the limit of useful and profitable height. The primary requirement of a department store building may consequently be defined as the largest possible floor space confined to the fewest possible stories.

But to this primary requirement of a large area for the display of goods and the accommodation of the various departments, must be added a thousand secondary requirements, which diminish the floor space actually used for the sale of goods by a very large percentage. Space must also be provided for the receiving, handling, and the storage and shipping of these goods, for the circulation and entertainment of the customers who come to buy them, for the disposal of the refuse and dirt which such a mass of business is constantly throwing off, for the wrapping up of packages and the return of the change, for the accommodation of the large numbers of employees who are constantly at work in such an establishment, for the location of the machinery and engines which all these services need, and last, but not least, for the sufficient protection of the great quantities of perishable material against destruction by fire. These different secondary requirements, not only frequently conflict with one another, but they all of them tend to diminish the space actually occupied by the counters for the display and the sale of the goods; and the disposition of the available space, so that the great and complicated machine will work smoothly without making any excessive deductions from the space occupied by the counters, is a matter of the nicest and most elaborate adjustment.

To take first the point mentioned last, viz., the important question of fire protection, the problem has been recently stated in its broadest aspect, as follows, by Messrs. De Lemos & Cordes, the architects of the new Macy store, the Siegel-Cooper and the Adams buildings: "In the planning of a department store the problem of fireproof construction and of fire protection are much more difficult and comprehensive than they are in other mercantile buildings. Not only is the area exposed to an attack of fire of a much larger extent, and, therefore, the spread of the fire much more difficult to check, but ample means must be provided to afford safe and immediate egress, in such an emergency, both for the public and for the several thousand employees in the building. The consequences are that the necessary requirements of space, light, attractiveness and facilities of communication, as expected by the owners; the devices to prevent as effectually as possible the beginning of a fire, and to check its spread when started; the rating of the different modes of construction and protection accorded by the New York fire insurance exchange schedule; and finally, the means that *must* be provided to secure the safe exit of so many thousands of people in the shortest possible time; all these necessary requirements cannot help but clash, and will call for many compromises to adjust properly one to another these various and often conflicting demands."

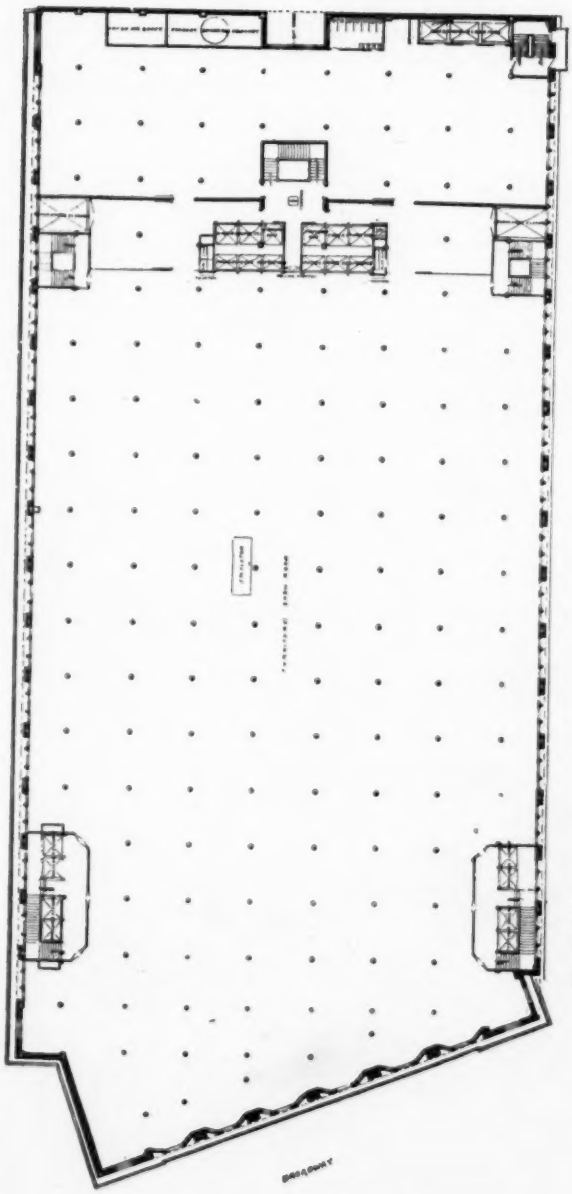
Each of the different points mentioned in this summary deserve some elaboration. Take, for instance, the very important one of a sufficient means of exit in case of fire alarm. For this and for every other reason it pays the proprietor of a department store to provide an abundance of aisle space on the different floors used by his customers, as well as a liberal supply of stairways, elevators and escalators. In the Siegel-Cooper store there are eight passenger elevators situated very near the centre of the building, and at one end two for employees and four for freight, as well as a moving sidewalk from the first floor to the second. The new Macy store, with a somewhat smaller superficial area, will have an escalator connecting all the floors not used merely for storage purposes, eight passenger elevators near the Broadway end, eight at the other end—six for customers and two for employees—two elevators for furniture and three for general freight, and in addition, several other service shafts. In order to be both useful and unobjectionable, all these passages are, and must be, of generous width and capacity. They must, most of them, be very conspicuous, and at the same time they must not obstruct the aisles and passages between the counters, nor exclude the daylight. But what is most important of all from the insurance point of view, all these shafts are dangerous as fire distributors, and that their



THE FIRST STORY PLAN

THE FIRST FLOOR PLAN OF SIEGEL-COOPER CO.'S STORE.

Sixth Ave., 18th to 19th Sts., New York City. De Lemos & Cordes, Architects.



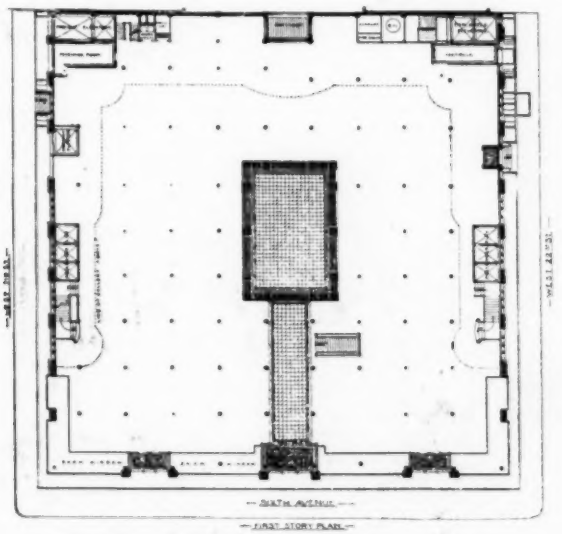
FOURTH FLOOR PLAN OF R. H. MACY & CO.'S NEW STORE.
Broadway, 34th to 35th Sts., New York City. De Lemos & Cordes, Architects.

numbers must be kept as low as convenience and the building laws permit, while they must be constructed in the most carefully fireproof manner. Hence, as Messrs. De Lemos & Cordes say in the article above quoted: It is desirable "to combine stairways and elevators at their various locations and to surround them and a hallway in front entirely with iron frame work, plaster and wire plate glass partitions. The plate glass will not obstruct the view, and the plaster surfaces of the partition near the ceiling will serve as a fire screen. Ornamentation can be applied so as to make the surfaces look pleasant and cheerful. Facings of marble or metal may be substituted for the plastered surfaces. The doors leading into the hallways should be fireproof and close automatically. Rolling shutters, to be used at night, should also be provided." In addition to precautions such as those suggested above, the Macy store has a fireproof partition separating the back of the building from the front. The object of this partition is to divide the rear of the store, used as it is for the receiving and shipping of goods, the housing of the employees and for the heating and ventilating stacks—to divide this part of the store from the counters, thereby effectually reducing the area throughout which the fire may spread, and at the same time providing a fire-escape in case the conflagration originated in another part of the building. Yet such a partition, useful as it would be in the case of a fire, is at other times a bar to freedom of movement throughout the building.

In another respect, also, the necessity of taking the most elaborate precautions against fire, so as to reduce the cost of insurance, has an important effect upon the design of a department store. Probably there are no other buildings in New York as large as the Siegel-Cooper or the Macy building, that are entirely without interior courts for purposes of light and ventilation. Some of the other large department stores do, indeed, have such courts, although for purposes of light alone, they are by no means necessary. The combination of abundant window space on the exterior, with the use of arc lights in the interior, provides all the light actually needed. Yet, even though not strictly necessary these light courts, extending through two or more stories, roofed with glass and surrounded by balconies, make such an attractive feature of a department store, that they would probably be universally used were it not that here again, and especially in store buildings of considerable height, the risk of distribution of fire in the building, owing to the introduction of the light court, would be so materially increased, that from a practical standpoint it is usually dispensed with.

In addition to the precautions which are taken against the spread

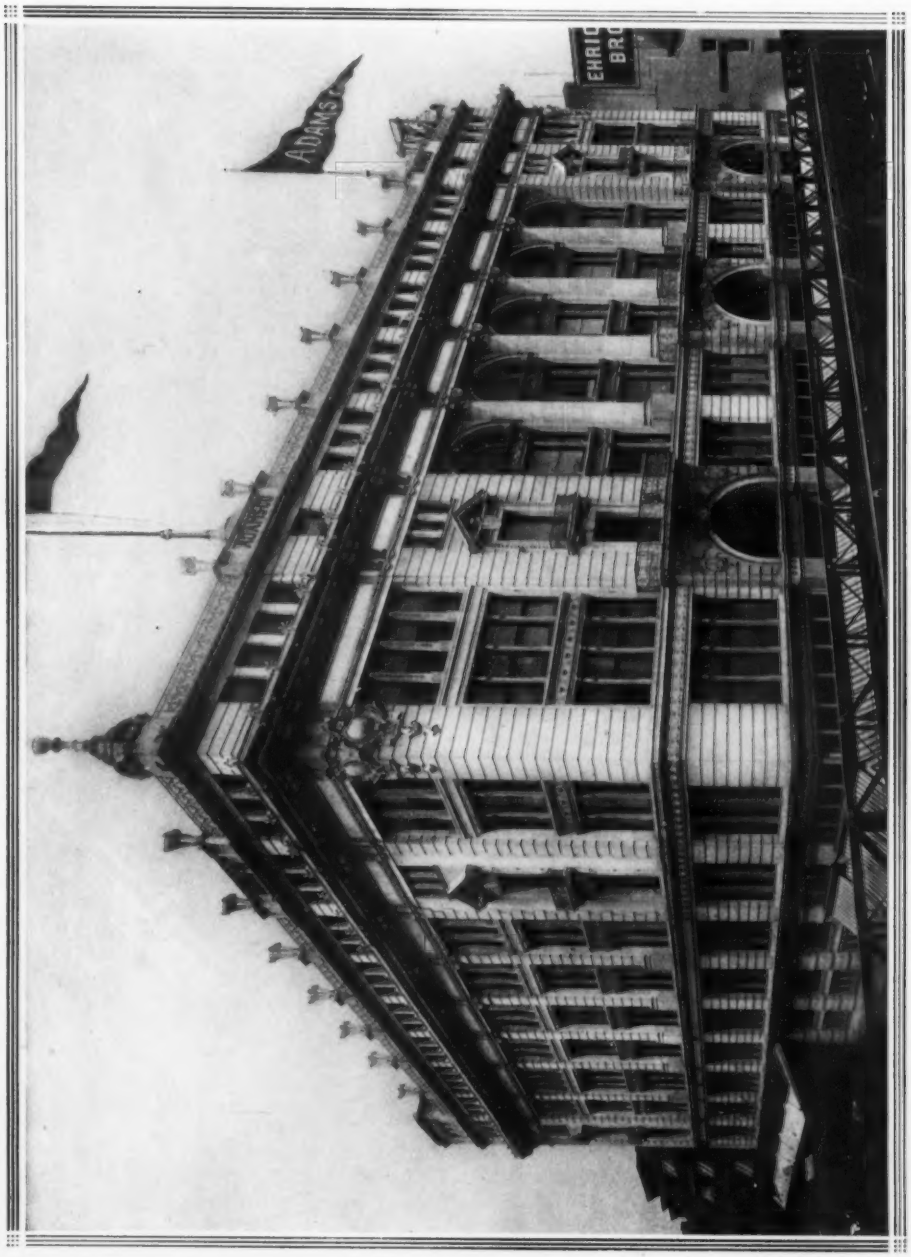
of fire, such as those outlined above, other precautions equally expensive and equally embarrassing to the architect, are used to extinguish a fire when started. The automatic sprinkler systems, for instance, necessary as they are for checking the spread of fire and reducing the insurance rates, give him a great deal of trouble. The placing of the enormous tanks, machinery and piping required to distribute the water properly is, in itself, an exceedingly difficult problem, while the numerous lines of suspended pipes and conductors naturally interfere, more or less, with any attempt at ceiling decoration. Besides the automatic sprinkler systems other precautions are taken to diminish that injury from water, which



FIRST FLOOR PLAN OF STORE OF ADAMS & CO.
Sixth Ave., 21st to 22d Sts., New York City. De Lemos & Cordes, Architects.

in case of a conflagration generally amounts to a larger total than does the injury from the fire itself. Thus, as soon as a fire sets the automatic sprinkler system in partial operation, great quantities of water are discharged on the floors, causing the utmost damage to the plastered ceilings, the merchandise and the floors themselves. Hence it is desirable not only to make the floors waterproof as well as fireproof, but to grade them and to gutter them with inside and outside leader connections.

So much for the all-important matter of fire protection, which, generally unsuspected by the public, has more to do with the planning of one of the big department stores than any other single group of considerations. Nevertheless this is only one of the many



THE DEPARTMENT STORE OF ADAMS & CO.

Sixth Ave., between 21st and 22d Sts., New York City.

De Lemos & Cordes, Architects.

DEPARTMENT STORE OF ADAMS & CO.
(Showing 21st St. Corner.)
Sixth Ave., between 21st and 22d Sts., New York City. De Lemos & Cordes, Architects.

complicated problems that has to be dealt with by the architect of such a building. A large amount of space, for instance, conveniently situated, has to be provided for the accommodation of lady customers—for waiting rooms, closets, manicure parlors, and even dental chairs. Moreover, the restaurant branch of a department store is becoming more and more "featured" by their managers, and consequently is consuming ever increasing quantities of space. The new Macy building in this, as in other respects, is the high-water mark of department store planning. It will provide sufficient room to accommodate at any one time no less than 2,500 tired shoppers, and as this space will be finally located on the ninth floor of the new building, it will enjoy every advantage of light, air and outlook. The kitchens, to do the cooking for these 2,500 people will, of course, be situated on the same floor, and as a whole it will constitute one of the most elaborate and best equipped, if not one of the most expensive restaurants in the city.

Next to the customers, the employees come in for the largest share of consideration. These employees have to be provided with lunch and recreation rooms, elevators, lockers, closets and a sort of a hospital, to which they can retire in case of sudden indisposition. It would seem as if the space which could be best spared for accommodations of this kind would be on the top floor, but the use of the top floor for such purposes is attended with obstacles which are almost insurmountable. It must be remembered that these employees, amounting at Christmas time to some 4,000 people, all arrive and depart at the same time. Now, if there were four elevators, each accommodating forty people, it would take twenty-five trips for each elevator, or one hour and forty minutes, all told, to move 4,000 people each way. And each person would have to be moved four times a day. The consequence is that it is practically impossible to provide the necessary space in any single part of the building, which is at all difficult of access; and in the Macy store lockers and closets, approached by stairways nine feet wide are provided on each floor for the employees there at work, an expenditure of space which is considerable, but necessary. Moreover, the rooms provided for the use of the boys and men are separated from that provided for the use of women.

Finally, the business of receiving, storing and distributing the goods is a similarly difficult and complicated matter, which can best be treated by considering it in relation to the general distribution and employment of space in the building. A large part of the basement is inevitably given over to the engines and machinery which operates the mechanical services required in such a building, including the electric motors, the pumps, the refrigerating plant, the engines required for the pneumatic tube service, the

heating plant and the like. The 540 horse-power, which the newspapers of 1876 considered so extraordinary in the case of the Stewart Building, appears to be very small beside the 1,500 horse-power developed by the engines in the Siegel-Cooper Building, or the 3,000 horse-power which will be developed by those in the new Macy building. The rest of the basement is used as a salesroom, always for house furnishing goods and for a general receiving room. This general receiving room is the place in which all goods are placed when they first come and before they are sent upstairs to be stored away before using. It is connected by freight elevators with the floors used for storage purposes, which include all the floors above the fourth or fifth story. These floors are not distinguished from one another in any way. Not being used for the sale of goods they are not approached by the passenger elevators, except those which are used by certain employees, and for the same reason they are frequently left entirely unfinished. They are all constructed to carry the same amount of weight, except in the case of the floor or floors which is used by the grocery department. The canned goods and the like sold by this department are the heaviest class of stock carried by a department store, and require specially strengthened floors.

The ideal arrangement, both for the receiving and shipping of goods, is the building of a large passageway into which the wagons can drive and from which the goods can be both discharged and collected. The shipment of the goods which have been purchased by customers is, however, a more complicated job than their receipt, and the arrangements made for the purpose are correspondingly elaborate. All the big shops use some system of bins labeled with the names of towns in Jersey, or with larger and smaller divisions of the Greater New York, to which the goods must be delivered, and after the packages are wrapped up or crated they are first sent to their appropriate division. In stores that have no passageway into which the wagons can drive, the bins are generally situated in the basement and carried to the wagons over the public sidewalk. But this arrangement, while sometimes necessary, has obvious inconveniences, and for the new Macy store a system has been worked out which will be very much superior to any hitherto in use, and which will greatly facilitate the distribution of the goods. In this case the bins will be situated on a private sidewalk, from which they can be most conveniently and expeditiously transferred to the wagons. Moreover, these bins are reached by means of mechanical belt and chain conveyors, so that throughout the whole process the amount of actual labor employed in the process of distribution has been reduced to the lowest possible terms.

THE DEPARTMENT STORE OF THE SIMPSON-CRAWFORD CO.

Sixth Ave., between 19th and 20th Sts., New York City. William H. Hume & Son, Architects.

Another matter accessory to the distribution of the goods, but almost as important as that process is, is the disposition of the refuse, of the accumulation of wooden and paper boxes, of old paper and packing material, and of the thousand-and-one odds and ends which the business of a large store throws off into a scrap heap. This refuse is so enormous and so useful that it provides a large part of the fuel used to run one of the most important boilers. In the new Macy store it will be carried away by means of a waste chute, built of brick and measuring 4 x 4, which will run from the top floor to the basement. Since this chute provided an easy means to distribute fire, as well as to get rid of refuse, it has been constructed with a particular view to this danger. On every floor is a trap door which opens down but not in the other direction, and which automatically closes as soon as a certain amount of pressure is removed. Another usually slow and laborious job, when accomplished by hand, will be much facilitated in the new Macy building by the use of machinery. A sweeping apparatus will be installed which, by the use of a vacuum, will suck the dirt from the floor in a small fraction of the time employed for the purpose by the respectable but not expeditious scrub-woman and sweeper.

Such is a brief account of a few of the essential requirements which an architect must consider when designing a department store, and the most casual reader will appreciate that it is a task which calls for the utmost ingenuity and fertility of invention. In fact, the big department store almost ranks with the modern ocean steamer or the modern hotel as a triumph of complicated and ingenious planning. It does not have to provide for the separate and peculiar needs of so many individual people as does a hotel or an ocean steamer, but it has to handle much larger masses of material and accommodate larger numbers of people—bent though they be upon much the same errand. At present the maximum number of employees is 4,000, and the maximum number of daily customers is something over 40,000. But what will these figures aggregate when at the end of thirty years there will be 7,000,000 residents of Greater New York, instead of only 3,500,000? If it takes a floor space of about 75,000 square feet to accommodate the shoppers of the present day, how much will it take to accommodate twice that number? And how will the proprietors of the department stores of 1930 secure such an increase of space? These are questions which cannot be answered, but they draw attention to the fact that the department store is still a very modern architectural type, and that the designers of these buildings of the future will be confronted by even more elaborate and difficult problems than those of the present day.

THE FRONT VIEW OF THE NEW METROPOLITAN MUSEUM OF ART.

Fifth Avenue, New York City.

The late R. M. Hunt, Architect.

ARCHITECTURAL APPRECIATIONS.—NO. 1.

The New Metropolitan Museum of Art.

THE architectural history of the Metropolitan Museum has been full of vicissitudes, of which the existing buildings bear the scars. The first building erected in Central Park for the use of the Museum, while it was still in hired quarters down in 14th street, was, as most of us now recognize, mistakenly placed. The Park was taken for the site as in the line of least resistance, in which, thanks to the campaign of education that has been going on ever since, it would now no longer be. The notion of creating new real estate values by establishing an important and ornamental public building where it will be the centre of a new quarter, instead of following the fashion and putting it on ground already held at fancy prices, is a branch of municipal economy not much more understood now in New York than it was a quarter of a century ago. One must go to Paris to see it practised in perfection.

The original museum, the nucleus of the present pile, was not much more fortunate in design than it was in situation, or than was the original building of the Museum of Natural History, built at about the same time and by the same architects, Messrs. Vaux and Mould. We are under great municipal obligations to the latter of these architects in particular for the incidental architecture of Central Park, very clever as it is in itself and almost perfect in appropriateness to its surroundings. But neither of these buildings was among its architect's successes. The design of each seems to have been complicated, and embarrassed, by the very fact which makes so much of the attractiveness of the lesser structures, the fact of being designed with reference and conformity to their situation in a public park. The obvious truth that structures of this character do not "belong" foredooms such an attempt to failure. But besides there is very little in either museum of Wrey Mould's felicity. The Museum of Art was a rather gaunt and rather monotonous piece of Victorian Gothic, a rough gray granite basement, with a superstructure of a single tall story in red brick, pierced at equal intervals with tall pointed openings of which the enclosing arch was "Florentine" in the sense that it was deeper at the apex than at the springing, though both extrados and intrados were pointed. These arches also were of gray granite, enclosing pediments of alternate stripes of red brick and white stone. The steep roof did what a roof could to save the structure under it. The interior, especially the great hall, which is still the chief feature of the actual interior, was much more interesting than the outside. The arched roof trusses exemplified impressively what then could be done in the way of an architectural

treatment of metal, although they look somewhat heavy and clumsy in the light of the possibilities of artistic engineering in steel as it has since been developed. But the exterior by no means "imposed itself" upon subsequent architects. The next of these, the late Mr. Tuckerman, hid much of the original building, to which, however, he conformed in material and in the main lines of his extension. Perhaps even that degree of conformity was a mistake, considering the change of style which changing fashion had imposed upon him, for his fronts, with their square-headed openings in place of the tall arcade, have the unhappy air of being bisected at the top of the basement. Neither is his classic detail more fortunate than the original Gothic. The shafts and lintels of the wall are quite unpretentious, but so much cannot be said of the excessive scale of the red terra cotta cresting, nor of its rather raw color, nor of the unsuccessful expedient of painting the brickwork. The triple southern entrance is not successful, and it is pretentious; and the architect may be said to have fallen between the two stools of modesty and "monumentality," of conformity and nonconformity. What he left of the original nucleus of the exterior architecture, his successor, whose work is immediately under consideration, has mostly hidden behind the connecting passage from the old building to the new, so that all that is left visible of the original exterior of Vaux and Mould is one of the arches of their arcade on each side of this connecting building.

The late Richard M. Hunt, the designer of the new wing which has been carried out by his son and successor, had a different problem from either of his predecessors. Evidently, in the first place, he had much more money to spend. As evidently, in the second, he was dispensed, by the fact that his building was to front Fifth avenue, from trying to make appropriate in its architecture to a park a building which plainly had nothing to do with the park, and so from attempting the solution of an insoluble problem. He took his architectural problem as what it had really come to be, the erection in a wide and frequented avenue of a monumental and imposing front which had nothing to do with rural scenery. His success, as we can all now see, has been really brilliant. The Fifth avenue front of the Museum of Art is not only its architect's most pronounced success in that kind, keeping all, and more than all the good qualities of the Lenox Library, while avoiding the monotony into which the massiveness and repose of that building do undoubtedly tend to degenerate. It comes very near to justifying the praise bestowed upon it by an architect whose own work is of a very different inspiration, as "the best classic building in this country."

The situation counts, no doubt, for much. The opportunity to stop the vista of a street with a monumental building, and to frame

its central feature with the riparian building of that street is very rare under our rectangular and unvaried street system. It gives the architect such a chance as is common in Washington, and has there been taken excellent advantage of by the architect of the Patent Office in planting his Doric portico squarely across the way. But we do not recall another such in New York, certainly not another in which the chance has been turned to so brilliant account. Upon the great scale upon which the front of the Metropolitan Museum has been laid out, its central feature, the arch with its flanking pairs of free standing columns, exactly fills and occupies the vista of 82d street. Even if the design and detail of the feature were much less successful than they are, a feature so set and framed would be effective. Evidently, his unusual opportunity was in the architect's mind, as it must be in the minds of all instructed spectators of his work, and as the results of it must be impressive to spectators who are not in the habit of analyzing their aesthetic impressions. In the setting of this front, quite as much as in the design of it, there is a distinct reminiscence of Paris. Nobody can see Paris without seeing that as much attention is given to placing monumental buildings as to designing them, nor New York without seeing that no attention at all is given to placing such monumental buildings as it has. "They order these matters better in France,' and when we wake up to the desirableness of making a city we shall order them better in New York.

In addition to its situation, and its adaptation to that situation, the success of the front in scale is perhaps the chief element in its architectural success. One would scarcely suppose, either from the photograph or from the building, that the front is nearly three hundred feet in extent. There is nothing nearer than the dwellings opposite by which to scale it, for the hinder parts of the Museum itself do not come into general view of this front. Nobody would give it its actual magnitude unless he had corrected his impression by mensuration. Nevertheless, it gets the benefit of its dimensions, not by a direct appreciation of them, but by the sense of largeness and simplicity which the design in the first place imparts, but which the scale most powerfully promotes. The confinement of the order to the central front, and the framing of it between plain wings, only as high as the order itself, are other excellent points of design. The "monument" thus gets the full effect to which it is entitled.

It is a modern, specifically it is a French version of Greco-Roman in which the front is composed. And it presents one, and a very eligible, solution of the problem presented by the mixed Roman construction, the use of the post and lintel, the column and entablature, and the arch as structural devices in the same façade. The most usual trouble in this conjunction arises when the two con-

THE NEW METROPOLITAN MUSEUM OF ART AS IT APPEARS LOOKING UP FIFTH AVENUE.

The late R. M. Hunt, Architect.

structions, both apparently engaged in the same work of holding up the superstructure, are too nearly equal, so that one cannot make out at a glance whether the main structural system is of orders or of arches. One must be, one is inclined to say, distinctly subordinate to the other. Very good results have been obtained where the arches have been subdued to the purpose of covering openings in a wall which itself appeared as a mere screen in a structure essentially columnar, and others, equally good, where the order, subdued in scale, has been employed as the decoration of a structure essentially arched. Perhaps the best result of all has accrued when the contradiction has been entirely obviated by the omission of the arches, and the order has appeared as the sole structure, the openings of the screen wall in the intercolumniations being also rectangular. This is the system in that admirable work, the building of the Faculty of Medicine in Paris. But this is no longer Greco-Roman, but purely Hellenic. None of these is the method used in the Metropolitan Museum. Certainly one cannot say either of these huge orders or of these huge arches, that either is subordinate to the other. They are of equal structural importance. How, then, is the contradiction avoided, as it clearly and successfully is? Simply by erecting a frankly arched wall, and then by decorating it with a pair of columns flanking each arch, but projected from the wall, having evidently nothing at all to do with it structurally, and existing as "their own excuse for being," although a reason of being is also supplied for them in the groups of sculpture they are to carry. From plinth to cornice they are entirely independent of the structure. "Constructed decoration" they certainly and avowedly are, but in no degree do they complicate or compromise a structure which is clearly complete without them. It is by adverting to this consideration that we are enabled to appreciate how forcible and valuable is the detachment of the columns, and the fact that their "load" is only the sculpture they sustain. Suppose, for instance, that the entablature of the order had been continuous along the front, the rest of the composition remaining as it is. How would the great arches have lost at once their significance and their impressiveness, as sustaining a crowning member abundantly sustained already? The "battle of the styles" which every Greco-Roman front presents, instead of being composed by a truce, as here, which assigns its own "sphere of influence" to each of the contending parties, would visibly have raged along the front, to its grievous detriment.

It is, of course, in the treatment of the arches and not of the order, that the modern and Parisian quality appears of which we have made mention. The order itself is after the strictest Roman precedents, and is especially well chosen for its purpose. Of the three

orders which they borrowed from the Greeks, the Romans degraded two, but the third, the Corinthian, they undoubtedly improved and made more effective by their enrichments. There is no Grecian example of this order that would not look poor and ineffectual on the scale and for the purpose for which the order is here employed. Being a pure enrichment, the order is, very properly, much more ornate than the arches, in which the customary failure of the Beaux Arts to make an effective elaboration of mouldings would be more conspicuous but for the subordination of the whole feature. The arches are in fact evident modernities between evident antiquities, while the simplicity and severity of the wings are unmistakably classic, unmistakably Greek. Not, however, that there is any discord or any solecism in the conjunction, for, in spite of the diversities, the front has a clear and effective unity.

In the details it is plain that the designer has kept his scale in constant view, and carried it through, in the parts in which his module failed him as well as in those in which it was available, in each of which the propriety and keeping are equally noticeable, or rather are not noticeable until one looks critically, but simply give an agreeable sense of "belonging." In the cresting, for example, where it was a happy thought to introduce masks, which fulfil the architectural functions of palmettes or other conventional ornaments, and which are better worth looking at on their own account; and equally a happy thought to set diagonally those at the angle of the return projections, which recognize the pyramidal groups of sculpture that are to crown the order.

Of the sculpture already in place it is to be said that it fulfils its architectural purpose well enough, and neither attracts nor repays much attention on its own account. It consists of the caryatids on the attics of the wings, and of the medallions in the spandrils of the great arches, and of the keystones of these. This faint praise will plainly not suffice for the groups to be seen against the great attic of the centre, which will offer opportunities of the first importance for independent sculpture and will really test the ability of the artists to whom they may be assigned.

One has to say of the "storm door" which is already in place that it is entirely unworthy of the architecture to which it is attached, and which it does what it can to vulgarize. Either it should be a provisional, temporary and unpretentious shelter, justified by its practical necessity, or else it should be an integral feature of the composition, a porch as monumental as the rest. The designer of it has made it neither one thing nor the other, but has fallen between the two stools in constructing a pretentious and cheap porch in sheet metal, mimicking monumental architecture and bringing it into contempt.

The Museum and the Rogers Bequest.

NOW that the Metropolitan Museum has come into a fortune, it becomes interesting to consider what it should do with its income and how it should go to work to make itself the great institution that we all hope it may become. As its catalogue reminds the public, the Metropolitan Museum is a "private corporation," and its director and trustees sometimes show restiveness at criticism or suggestion. Yet, a private corporation which occupies a building erected by the State, on land owned by the city, can hardly claim that it has no public responsibilities, and that what it does, or leaves undone, is wholly its private business. It receives certain aid, enjoys certain privileges and immunities, because it undertakes to do certain things which, in European countries, are done by the State for the benefit of all the citizens; and the way in which it does these things is none the less a legitimate matter for criticism or for censure, because the body of citizens has no direct means of action upon the institution. Rather because the people, for whom they are working, can only criticise or advise, should all honest and temperate criticism be frankly welcomed. No one means to attack the Museum, or to "defile the temple of art," as one of its officers recently put it. No one has anything but gratitude for much that that institution has done for us; anything but hope for its greater usefulness in the future. It is in no carping spirit, and in the hope that we shall not be considered impertinent, that we offer the following suggestions.

We shall not at this time attempt to deal in any way with the Museum's collections of sculpture and of architectural and archæological objects, but shall confine our attention to the collection of paintings, and shall consider what are the directions in which special effort is needed to make the Metropolitan a great museum of painting. It is obvious that the first necessity is to determine what the Museum now possesses; and here we are met with a difficulty at the outset. The collection is practically without classification, and the catalogue is full of doubtful, or more than doubtful attributions. The terms of several important gifts have rendered the lack of classification inevitable, it being necessary, for instance, that the Wolfe bequest shall be "kept together and catalogued as one collection, or be forfeited to the legal heirs of the donor." Courtesy and the disinclination to look gift horses in the mouth have discouraged particularity as to authenticity. Beside all this, pictures which are only loaned to the Museum are mingled with those which it owns, and it is necessary to keep a sharp eye upon the catalogue in order to distinguish between them.

For purposes of stock taking, then, if for no others, it would be well that the Museum should begin by reforming its catalogue. But there are other reasons of importance why the attributions of the present catalogue should be revised. If a work of art be good in itself it is not always of importance that it should be known by whom it was produced, but it *is* important that it should not masquerade under the name of an artist who did not produce it, while if the work be bad or indifferent a false attribution may do great harm with the unsuspicious. The docile student tries hard to convince himself that the bad picture is good; his standards of judgment become hopelessly confused, and he is encouraged in a kind of artistic hypocrisy which is wholesome neither for his art nor his morals. The student of more independent mind concludes that, as this work, apparently accepted as that of a famous master, is bad, so the great reputations of the past are artificial and without any basis in real artistic greatness, and is confirmed in a scornful narrowness of taste that is fatal to true culture. The better the apparent authority on which these false attributions are offered the more disastrous is the result, and the mistakes of a connoisseur, like the late Henry S. Marquand, are the more dangerous for the good judgment he often displayed.

The Museum and the public owe a great debt to that gentleman for the enlightened generosity which formed the Marquand Collection—a collection which contains a number of works of a very high order, and worthy of an honored place in any museum in the world. During his lifetime it was natural that gratitude and respect should have sealed the lips not only of the Museum authorities, but of competent critics. But there seems no longer any reason why it should not be confessed that he was not infallible, and that the Marquand Collection contains a number of works which must be classed as doubtful, and several which are certainly not what he thought them. Indeed, this has been admitted in the case of one picture, the "Portraits of Two Gentlemen," which is catalogued as "attributed to Franz Hals." It is doubtful if any of the so-called Velazquezs in this gallery can be rated as other than school-pieces, the "Masaccio" and the "Van Eycks" cannot be unreservedly accepted. The "Pyramus and Thisbe" is certainly not by Rubens, and the "Susannah and the Elders" is probably a school replica or an old copy of the well-known picture in Munich. There are one or two other pictures in this collection about which doubt may be felt, but the two which most imperatively demand recataloguing are the "Portrait of a Lady," now attributed to Da Vinci, and the "Portrait of Archbishop Cranmer," attributed to Holbein. Even if the quality of the former were vastly better than it is—and the workmanship is inferior to

that of any Luini we know—the fact that there are not more than half a dozen accepted Lionardos in the world should, of itself, be sufficient to justify a modest interrogation mark in the catalogue. When so lovely and so Lionardesque a picture as "La Belle Féroninère" is classed among doubtful works, what shall we think of the staring eyes and crooked, black mouth of the Metropolitan picture? As for the "Cranmer," it is almost inconceivable that so badly drawn and feeble a performance should ever have been attributed to one of the greatest draughtsmen of all time.

Of course, as is well known, all the great galleries of the world have been engaged, of recent years, in this sort of overhauling of catalogues and readjustment of attributions, and it is not surprising that it should be needed at the Metropolitan. The first important acquisition of the Museum was a collection of Dutch and Flemish pictures bought in 1871. It contains a few good pictures and many indifferent ones—genuine pictures by inferior men, or doubtful pictures attributed to great masters. The "Return of the Holy Family from Egypt," attributed to Rubens, seems to have a good pedigree, but, if genuine, is so badly cleaned and repainted, as to be practically worthless. The "Dutch Burgomaster" it is hard to accept as by Van der Helst, in face of the superb portrait of Jean Van Hale in the Marquand Collection. The most satisfactory picture of this purchase is the "Burgomaster of Leyden and his Wife," by Karel Van Moor, a sound and excellent piece of work by a second-rate master. Besides this and the Marquand Collection, and the Catherine Wolfe Colection of modern paintings, there are a number of pictures in the Museum, gathered at different times and in different ways, and not all of these are certainly what the catalogue states them to be. Certain pictures attributed to Reynolds are notably suspicious, particularly the "Mr. John Hawksworth," which bears no resemblance in manner of painting to any Reynolds we have ever seen.

As nearly as can be judged in the present arrangement, or lack of arrangement, of the Museum (which, unfortunately, seems inevitable and permanent), its actual possessions will be found to be, roughly, somewhat as follows:

Of the great Italian and Spanish schools: Very little at all considerable.

Of the Flemish school: One good Rubens, one first-rate Van Dyck and two or three good ones, and a number of minor pictures and doubtful pictures.

Of the Dutch school: Several Rembrandt's, one of them a great one; a fine Van der Helst, a fine Ruysdael, several good pictures by Hals, a beautiful little Vermeer, and a considerable number of other pictures of less importance.

Of the English school: Several Reynold's, mostly in a bad state of preservation, a couple of middling Gainsboroughs, two or three Turners and a few others of some interest. Of Haydon's amazing "Napoleon at St. Helena," one need say little.

Of the modern French school: A large and representative collection, which, however, includes only one Corot, and is entirely without a Millet or any adequate examples of the earlier men.
to acquire if the opportunity offers—should be purchased for some

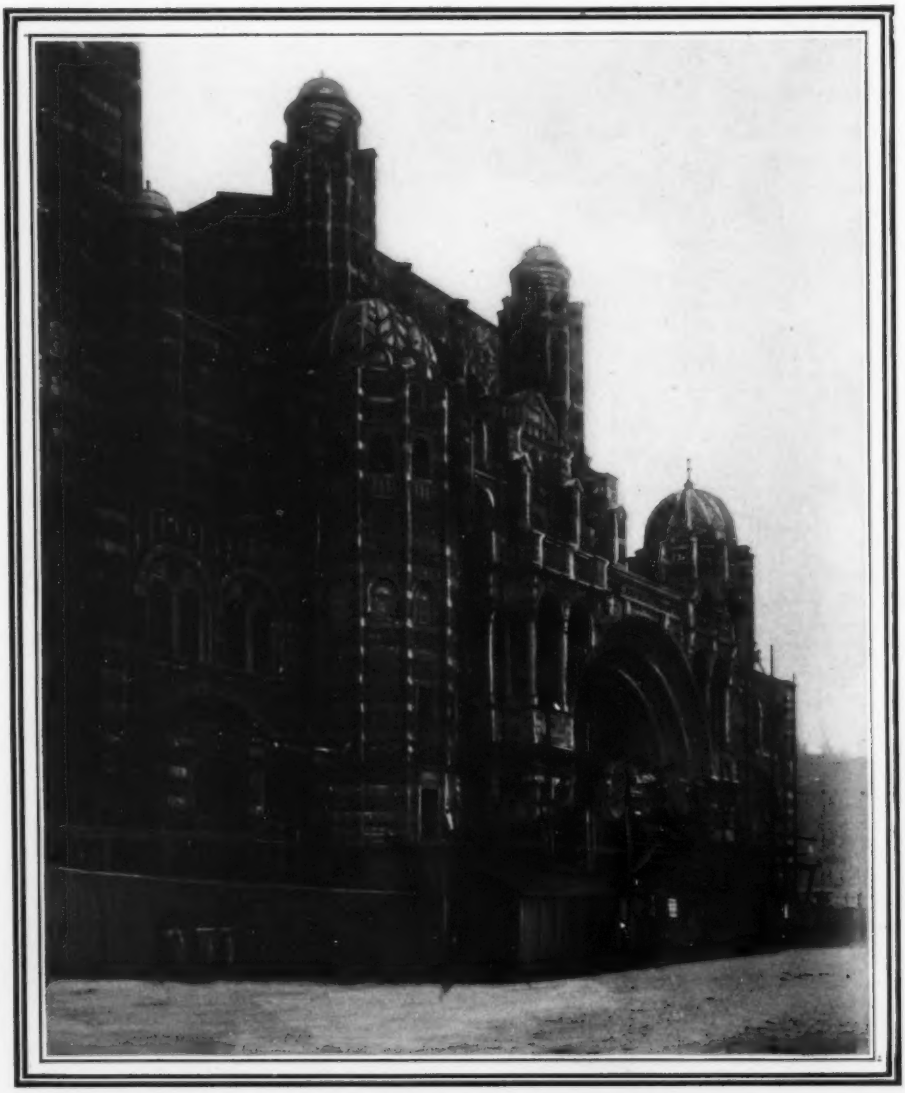
Of the American school: A rather haphazard and fortuitous collection containing some good examples.

This is a list of possessions to be proud of and grateful for, but its weak points are as obvious as its merits, and the policy necessary to be pursued for the strengthening and completion of it outlines itself clearly. For instance, the collections are so weak in Italian pictures that every opportunity should be seized to acquire good and authentic Italian pictures, particularly of the early and high Renaissance, whether or not they are the work of the greatest men or the greatest works of their author's. The works of the later Italian schools may be, relatively, neglected, not only because of their lesser importance, artistically and historically, but because the Museum already possesses some late Italian works —notably, two or three Tiepolos. On the other hand, the Museum contains quite as many second-rate Dutch and Flemish pictures as it needs for the present, and only works of real and indisputable importance in those schools—works which it would be a crime not to acquire if the opportunity offers—should be purchased for some years to come. Such a collection as that of J. L. Menke, now on exhibition at the Museum, though it doubtless contains many genuine works of minor painters, as well as some exceedingly doubtful ones attributed to great names, would, if added to the permanent collection, only increase its present disproportion. Any first-rate pictures by the great Spaniards would, of course, be welcomed, as would first-rate pictures of any school, but the Spanish school is not of the first importance, outside of one or two names. In the English school the great desideratum is some adequate representation of its greatest man, Gainsborough. If Mr. Hearn's beautiful "English Landscape" were owned by the Museum, instead of being merely loaned to it, it would almost render the acquisition of other Gainsborough landscapes unnecessary; but a really fine portrait or two by him are to be wished for. Turner is already fairly represented, but Reynolds and Constable are not. Some good examples, if obtainable, of the French school of the seventeenth and eighteenth centuries would be highly desirable. Of the current work of France in the nineteenth century there is, perhaps, a sufficiency now in the Museum, but there

are several great names that are unrepresented or poorly represented. The great modern Frenchmen, for whose work a lookout should be kept are, especially, Prudhon, Ingres and Delacroix, Corot and Millet, Baudry and Purvis de Chavannes.

So far we have considered the demands of a gallery of the art of the past for the benefit of the present, and of foreign art for the education of the American artist. Should not the Museum also consider the possible wants of the future and make some systematic effort to acquire a representative collection of works by contemporary American artists, which may some day have a great historical value? Every great gallery of Europe makes such an effort for the art of its own country. France buys pictures in considerable numbers at each annual salon and places the best of them in the Luxembourg. From those, again, the best are selected for permanent place in the Louvre. The Metropolitan should, and might be, the great American museum; but, so far it has done less for the formation of a collection of American art than the museums of either Boston or Philadelphia. If it were to follow the example of the French Government and put aside a certain sum every year for the purchase of American pictures, either from the current exhibitions or direct from the artists, it could form, in a comparatively short time and for comparatively little money, a collection of great future value; and it might, incidentally, encourage serious art among our painters and help to convince a slow people that art really exists in this country. It would be cheaper to buy pictures while the artist lives than to wait till he is dead, and most artists would be willing to accept lower prices from the Museum than from private patrons, knowing that their work was to be permanently placed in dignified surroundings. Of course, the purchases would have to be judiciously selected; but this is true of any purchases, and the collection could, in the future, be weeded of pictures that might not permanently commend themselves.

In all this we do not imagine that we have told the authorities of the Metropolitan Museum anything they do not know, or recommended any course that they would not be likely, of their own motion, to consider, if not to adopt; but, as discussion never does any harm we have offered these few observations and suggestions for what they are worth.



THE WEST FRONT OF THE NEW CATHEDRAL AT WESTMINSTER, SHOWING THE THREE RECEDING PLANES OF THE VESTIBULE, NARTHEX AND NAVE. THE CAMPANILE IS ON THE LEFT.

John Francis Bentley, Architect.

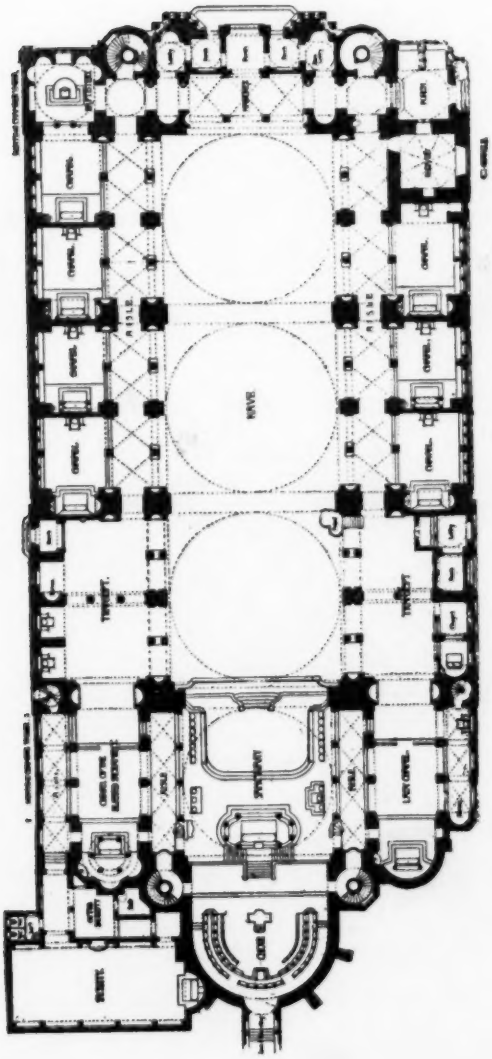
THE NEW CATHEDRAL AT WESTMINSTER.

THERE are still a few people living who may remember the inscription on the Monument wherein the fire of London was ascribed to "the treachery and malice of the Popish faction." It is but 70 years since that was erased, yet to-day, in Westminster, we see another erection towering to a greater height, and speaking not indeed of Catholic supremacy, but at least of Catholic power and pertinacity. We are concerned here mainly with the architectural significance of this new Cathedral, and need not consider whether its erection is a sign of greater religious faith or greater toleration, much less to what extent toleration may be made up of indifference.

Westminster Cathedral stands tenth in superficial area among the Cathedrals of England, but in cubical content it probably exceeds all but St. Paul's. No English Cathedral possesses such a lofty vault, as wide a nave, so high a tower.* It is comparatively short and yet exceeds in length the cathedrals of Chester, Hereford, Rochester, Southwell, Bristol, Ripon, Carlisle, Oxford and Truro. No other building of its class and size has been erected in Great Britain since the days of Wren. What then must have been the feelings of Mr. Bentley when its design was entrusted to his brain and hand. Many young and some middle-aged architects would have given years of their lives for such an opportunity. One wonders if Mr. Bentley determined from the first on advocating the use of a style so far removed from those to which we are accustomed. He might have chosen Gothic (as in the case of his church of the Corpus Christi, Brixton Hill), and thus have courted unequal comparison with those older fanes which are the glories of our medieval cities. Or, he might have selected a Renaissance type and erected a larger Oratory, a cheaper St. Paul's, both demanding a dignified site which was not forthcoming. Mr. Bentley, however, adopted a style novel to English eyes, yet eminently Christian, being the oldest style evolved by Christianity—the Byzantine. Yet, as treated at Westminster, it is permeated with modernism; is economical of ornament; fireproof as regards construction; and religious in total effect, even if somewhat secular in detail like Catholicism itself.

*The domical vaults to the nave are 92 ft. to the springing, and 112 ft. to the crown; the highest vaults at Westminster Abbey measure 105 ft. The new nave is 60 ft. wide between the piers, as against 43 ft. at York Minster, which, however, is only ceiled in wood. (The nave of Brompton Oratory is vaulted and measures 51 ft. across.) The New Campanile will be about 280 ft. high, as against the central tower at Lincoln, which is 262 ft. It is exceeded by the lantern of St. Paul's (356 ft.), and the spires of Salisbury (404 ft.), St. Michael's Coventry (320 ft.), and Norwich (313 ft.).

THE NEW CATHEDRAL AT WESTMINSTER FROM THE SANCTUARY.
John Francis Bentley, Architect.


NAVE
AISLE
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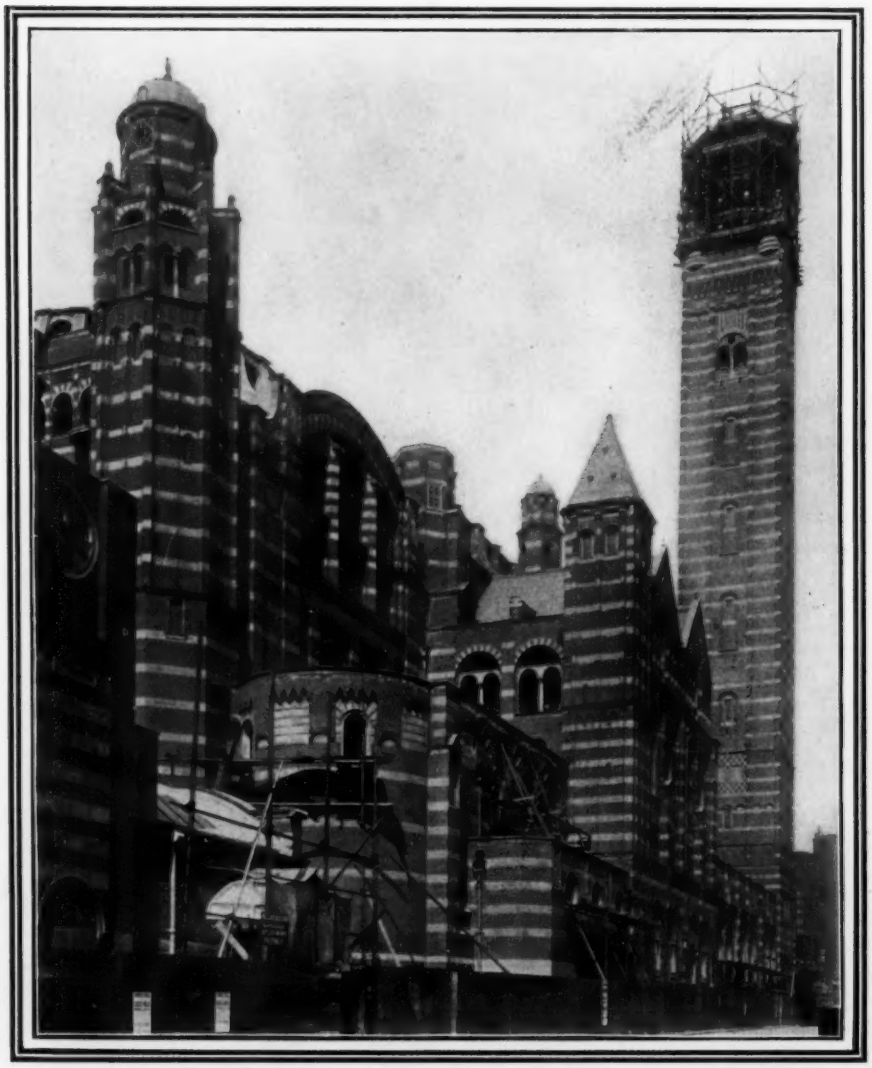
CHAPEL
CHAPEL
CHAPEL

One of the conditions affecting the design of the Cathedral when its erection was finally determined upon in 1894, was, that, the site being already hemmed in by lofty flats, some feature of great height was essential to reveal the position of the church at a distance. A tower was selected for this purpose, but a tower of proportions somewhat attenuated. When completed it will be nine times its breadth in height, as against proportions of nine to two in the case of the Victoria Tower of the House of Parliament. This latter is

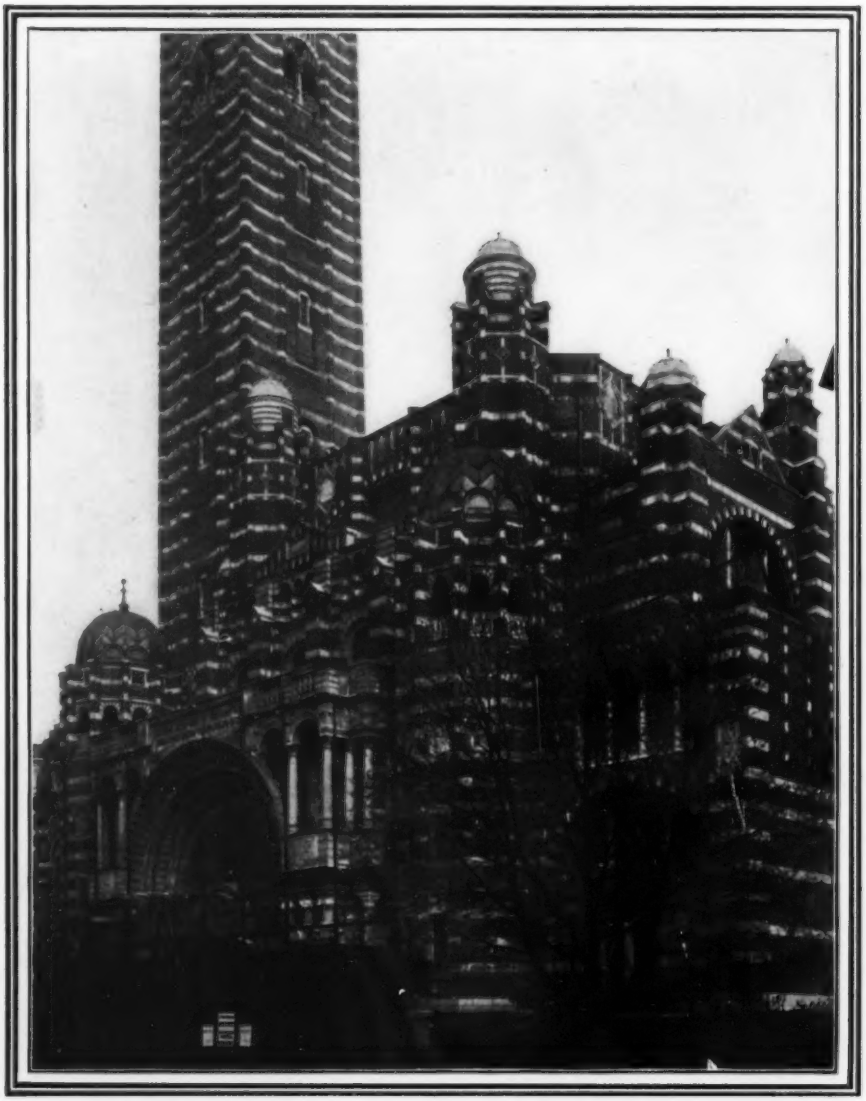
A CAPITAL IN ONE OF THE AISLES OF THE WESTMINSTER CATHEDRAL.
John Francis Bentley, Architect.

80 feet square as against 30 feet square of the new campanile, and being 325 feet high as against 280 feet, it contains eight times the cubical contents. Considerations of economy then disarm the critic who may feel that the campanile appears already like a plant struggling upwards towards the light, especially as Mr. Bentley has not distributed his means as Mr. Collcutt did in the case of the Imperial Institute. Indeed, towers of these proportions are not uncommon in Italy, and further East we may admire the minaret and pagoda. The feeling then is perhaps due to the English taste for sturdiness,



VIEW FROM THE SOUTHEAST WITH THE AISLED LADY CHAPEL IN THE FOREGROUND.

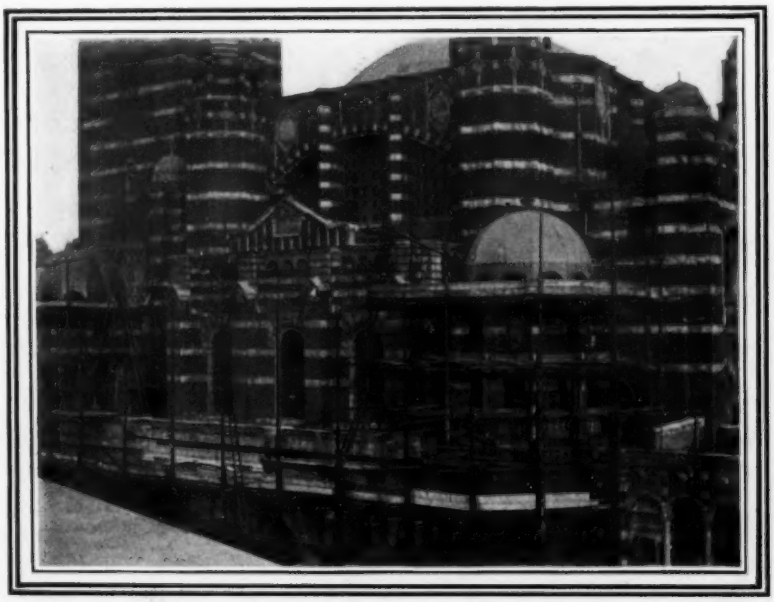
John Francis Bentley, Architect.



ANOTHER VIEW OF THE WEST FRONT OF THE NEW CATHEDRAL AT WESTMINSTER, SHOWING THE SUCCESSIVE PLANES OF PORCH, NARTHEX AND NAVE CAUSED BY NEIGHBORING RIGHTS OF ANCIENT LIGHT. THE TYMPANUM OF THE ARCH WILL BE FILLED WITH MOSAIC.

and he who would enjoy the new Cathedral as such must suppress all bias of nationality and tradition.

In England the west front* is exceeded in breadth only by those of Lincoln (180 feet), and St Paul's (176 feet), and whereas at Lincoln the façade is mainly a glorious screen obscuring the outline of the church, and greatly exceeding the body of it in width, that at Westminster is an organic composition and no wider or higher than any transverse section of the church itself. The front is in three planes, the higher ones receding in a manner which suggests that the design had been partly governed by considerations of ancient lights. If this be so we may congratulate the architect for turning necessity to so good account. The lower plane of the work,



THE UPPER PORTION OF THE WEST FRONT.
The three semicircular beaded windows light the west gallery above the narthex.

which rises from a granite plinth, comprises a triple doorway and tympanum within an enclosing arch of receding orders. These spring from columns fluted only as to their upper thirds in height and connected by a series of festooned and sculptured medallions. On either side are decagonal towers surmounted by copper domes, and beyond these again are the baptistery to the south and a subsidiary porch to the north.

In the second plane we recognize the carrying up of the outer wall of the narthex. This contains three windows surmounted by

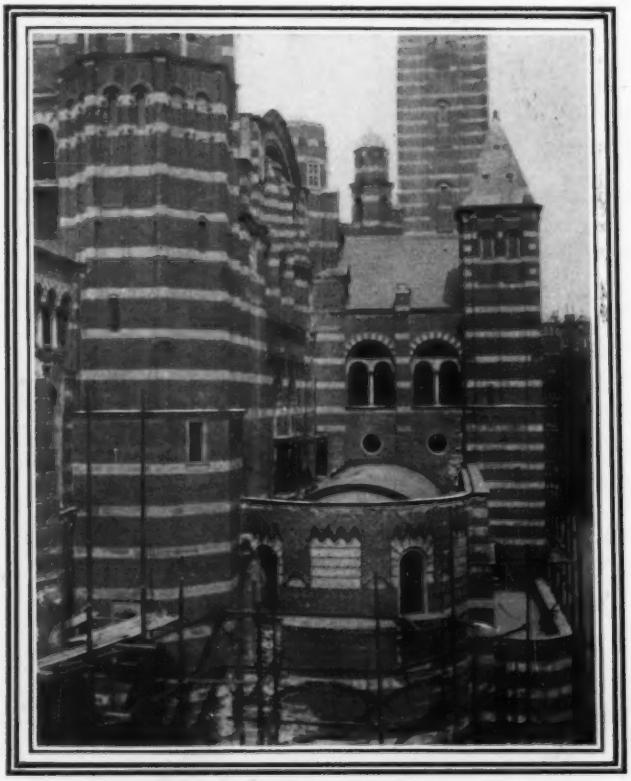
*The longer axis of the cathedral lies northwest and southeast, the high altar being at the southeast end, but it will be convenient to consider the church as orientated.

CAPITALS AT THE MAIN ENTRANCE OF THE NEW CATHEDRAL AT WESTMINSTER.
John Francis Bentley, Architect.

CAPITALS AT THE MAIN ENTRANCE OF THE NEW CATHEDRAL AT WESTMINSTER.
John Francis Bentley, Architect.

a row of shell topped niches. Here as in the medallions we recognize that blending of Renaissance "motif" with Byzantine detail which is characteristic of the whole structure, and gives it a certain piquancy.

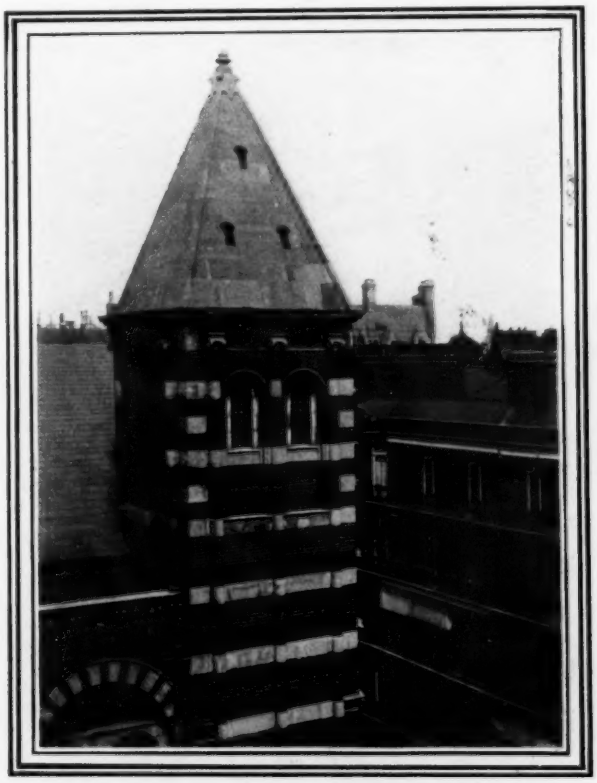
The third plane discloses the west wall of the nave itself, and is occupied mainly by a segmental headed window following closely the lines of the semicircular transverse arches within, but lessened in span by the flanking turrets leading to the roof. The walls



NORTH TRANSEPT OF THE NEW CATHEDRAL AT WESTMINSTER, FROM THE EAST, SHOWING ALSO THE CONCRETE BARREL ROOF TO THE LADY CHAPEL.
John Francis Bentley, Architect.

beyond these turrets are really piers bearing the short barrel vaults which are at right angles to the length of the nave and form a series of lateral abutments to the thrusts of the concrete domes with which it is vaulted. Passing to the left into Ambrosden Gardens, one notices above the angle porch previously alluded to, a charmingly detailed balcony approached from doors recessed behind an arcade, the whole showing in conjunction with features

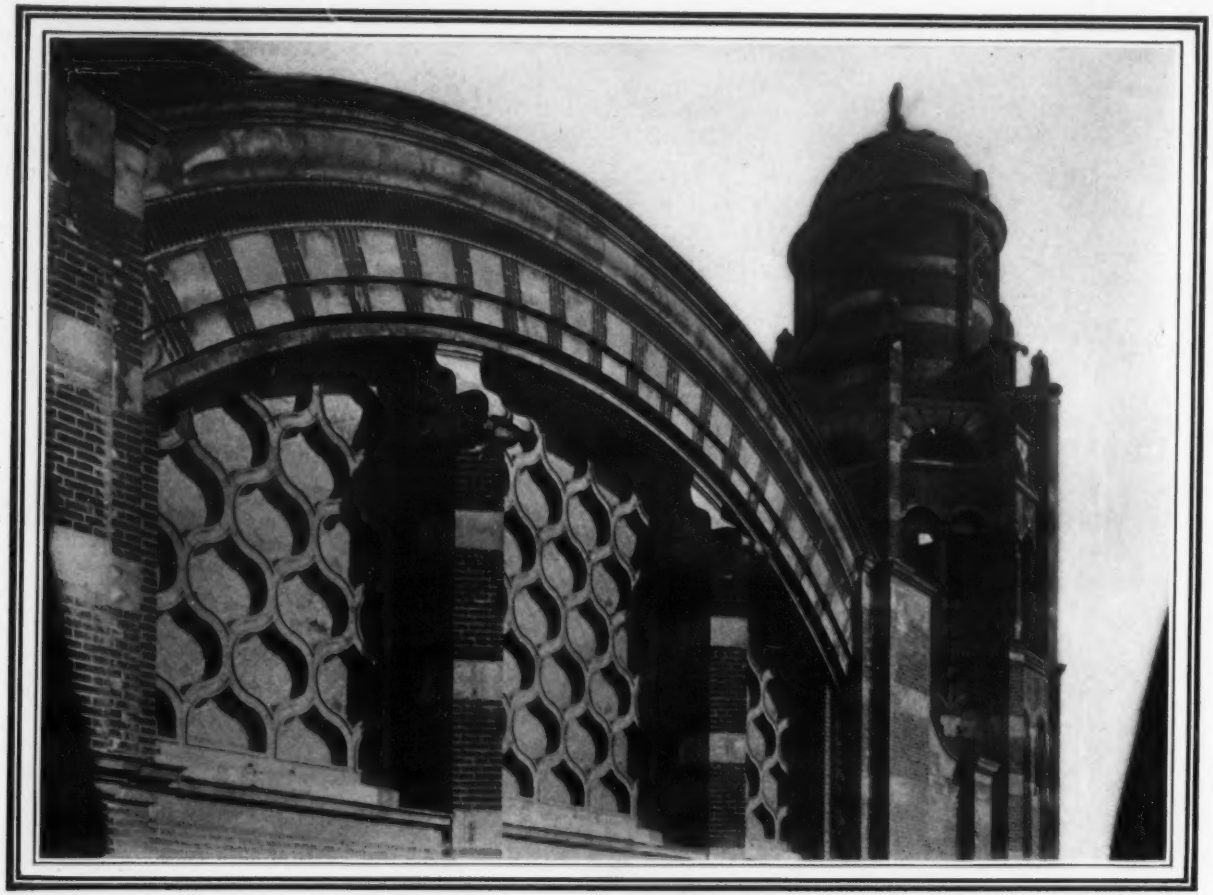
elsewhere the deliberate intention to obtain pleasing effects of shadow. The columns to the doorway beneath are channeled with flutes alternately wide and very narrow; the capitals, too, are of an unusual type. Beyond the tower are the first and second chapels of the nave, which are treated alike with untraceried windows coupled under an enclosing arch, surmounted by a deep parapet wall of brick with frequent stone lacing courses, and interrupted by occasional niches. The third chapel is lit by a couple



STAIR TURRET AT AN ANGLE OF THE NORTH TRANSEPT OF THE NEW CATHEDRAL AT WESTMINSTER.
John Francis Bentley, Architect.

of three-light windows with traceries in the upper portions. Above these chapels rises the lofty wall of the aisle, or more accurately, the curtain wall connecting the buttress piers previously mentioned; and yet higher is visible the wall of the nave proper.

The transept is roofed at a lower level than the nave and terminated with twin gables, being internally ceiled with parallel barrel vaults. These transept ends are almost the only gables on the church, and, taken in conjunction with the square turret at



THE CLERESTORY WINDOW WHICH LIGHTS THE SANCTUARY, SHOWING THE TERRA COTTA TRACERY AND A BAND OF ROUND-BACKED BRICKS IN THE ARCH ABOVE.

John Francis Bentley, Architect.

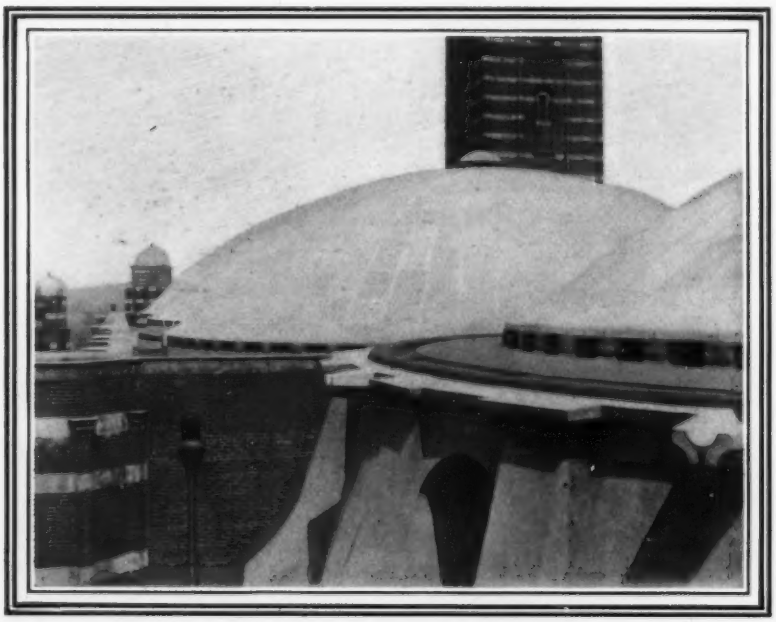
the eastern angle of the transept, form a composition less alien in outline than other portions of the structure. The turret is finished with a stone pyramidal roof and connected with the body of the edifice by a short open arcaded gallery, the whole being simply and vigorously treated and somewhat Romanesque in character. The bay of the church beyond the transept comprises the sanctuary, for the raised choir is beyond in the apse. The dome of this bay differs from those of the nave, being rather

THE NEW CATHEDRAL AT WESTMINSTER, FROM THE SOUTHWEST.
John Francis Bentley, Architect.

lower and pierced with circular headed windows in its lower portions. Beneath on either side is a large lunette divided into three parts by V-shaped piers, the intervening windows being filled like several others with terra-cotta tracery. These traceries are varied in character, sometimes leaning to a reticulated type, and at others to more geometrical design, based on the Italian method of pierced slabs, but are built up of separate blocks and carried over the whole surface of the windows. Flanking the sanctuary is the

THE EAST END OF THE SACRISTY OF THE NEW CATHEDRAL AT WESTMINSTER.

John Francis Bentley, Architect.

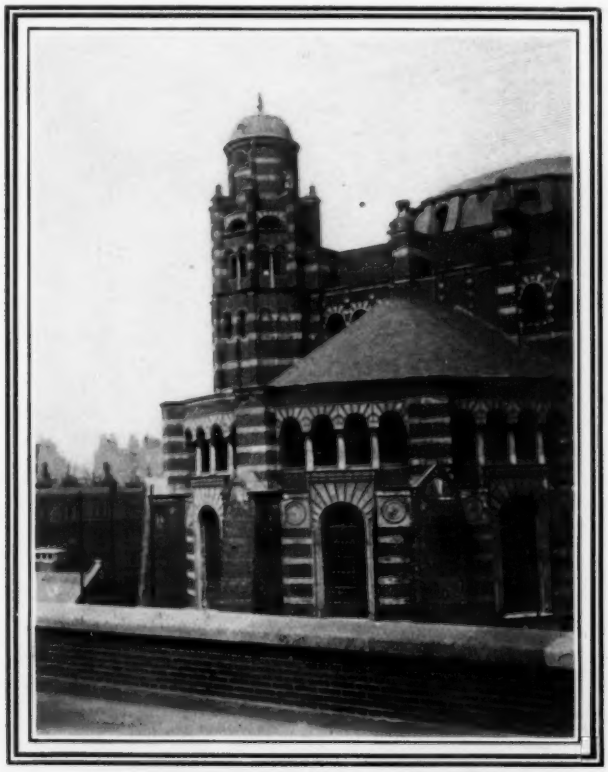


THE DOMES OF THE SANCTUARY AND OF THE NAVE, SHOWING THE EXTERNAL COVERING OF CEMENT SLABS, ENCLOSING AN AIR SPACE.

John Francis Bentley, Architect.

apsidal Lady Chapel with its own north aisle; the barrel vault of this chapel is recognizable in the accompanying photograph.

We have now reached the apse, which, with its open gallery, steep green roof and foliated iron apex cross, backed by the loftier wall forming the square end of the sanctuary, the flanking towers and white concrete dome between, forms a remarkable and beautiful composition. Viewed from the corner of Ambrosden Avenue,



THE APSE OF THE NEW CATHEDRAL AT WESTMINSTER FROM THE ROOF OF THE ARCHBISHOP'S HOUSE.
John Francis Bentley, Architect.

where the archbishop's new house forms the foreground, or from the end of Morpeth Terrace, where the steep roof of the sacristy occupies a similar position, the picture includes also a transept and the campanile.

Putting aside archaeology, sentiment, surroundings and the softening influences of time, and considering only the design of the architect, how does this east end compare with some of our old cathedrals?

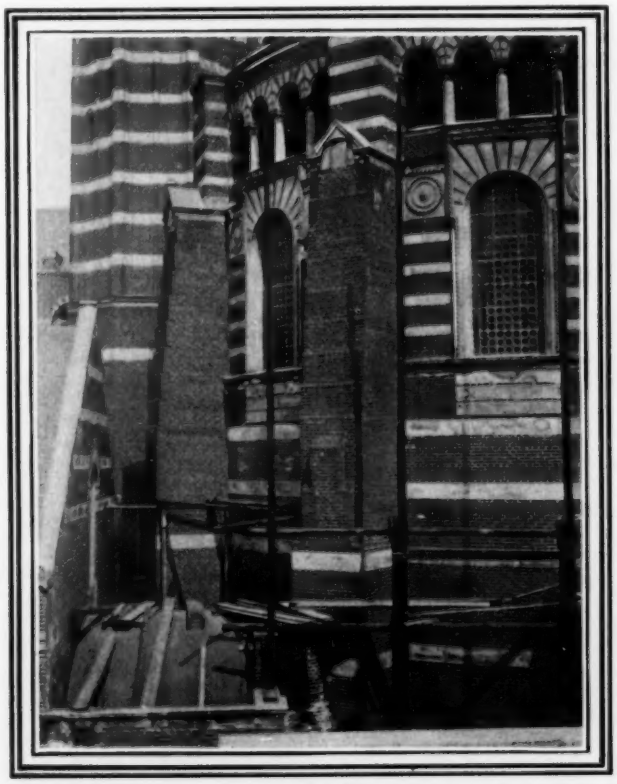
Even if such reservations are possible it is a question that each

much answer to himself. Probably none would rank it with the Nine Altars of Durham, the three gables of Lincoln, with its attendant chapter house, the storied lancets of Ely and its spacious Lady Chapel, the great traceried windows of Gloucester set in rich embattled walls, or the grouped chapels of Salisbury, Exeter and Wells. But when these are catalogued, doubtless arise, and we feel that in external beauty, as well as scale, the new cathedral is not unworthy of its title.

THE UPPER PORTION OF THE STAIR TURRET FLANKING THE APSE.
John Francis Bentley, Architect.

Passing from the general composition of the east end to a brief consideration of its details, we must remind ourselves once more of a certain measure of frugality which the architect has been constrained to observed. Had funds permited, here was a splendid field for the sculptor. The buttress summits, now either plain or finished with capstan-like finials, would furnish admirable bases to groups of organic sculpture, the only examples of which are the birds brooding above the domes of the flanking towers. But

we feel on the apse, at least, that whatever ornament exists, is right. The simple but repeated sets-off to the buttresses impress the eye with being admirably placed, and the one considerable break in the projection of these buttresses is at the point where the vault impinges from within, all above is left vertical as being mere dead load unaffected by thrusts. The semicircular headed windows, with their thickly leaded glazing, are enclosed within a



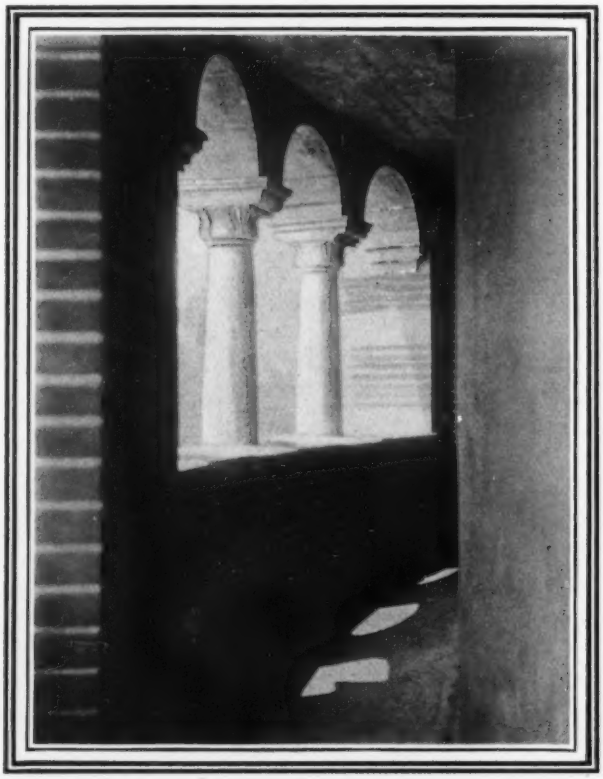
DETAIL OF THE APSE, SHOWING THE VERY GRADUAL OFFSETS OF THE BUTTRESSES.
John Francis Bentley, Architect.

line of Venetian billet mould, the spandrills being filled by the deeply radiating voussoirs of stone separated by single courses of bricks, a treatment which is repeated horizontally in the aprons below the sills. The type of column used in the arcaded gallery is akin to that of the Romanesque mid-wall shaft, having a capital bearing an oblong abacus adapted to the support of a thick wall with satisfactory effect.

That it is not possible to include within a single glance the full height of the wall rising above the windows is scarcely the fault

of the architect, who has had to compress his buildings within the limits of a town block more suited to a speculative builder than for a temple to the King of Heaven.

Except that the position of the campanile on the north is here occupied by an additional chapel, the south elevation is similar, in most respects, to that toward Ambrosden Gardens. The walls, however, are treated with less detail of herringbone and other

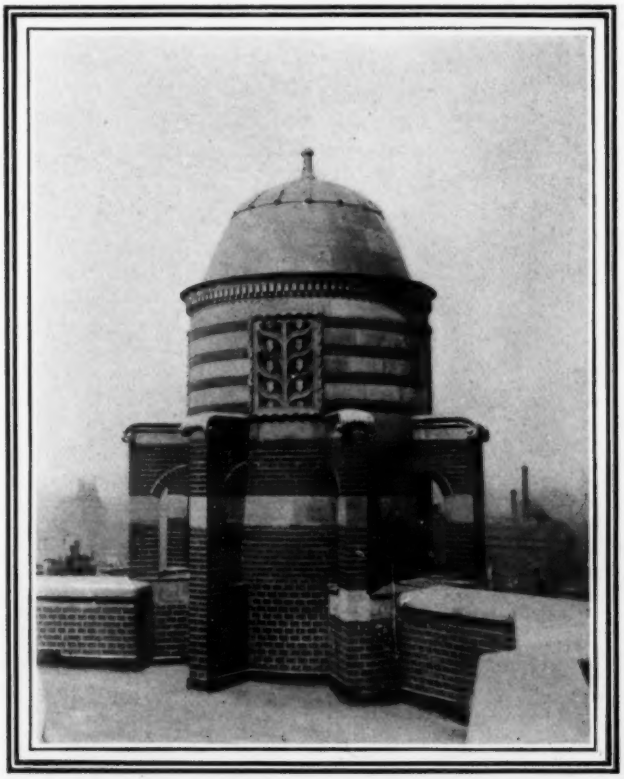


PASSAGE OF THE EXTERNAL GALLERY ABOVE THE VAULT OF THE APSE. THE COLUMNS HAVE THEIR BASES UPON A STRING-COURSE BELOW.
John Francis Bentley, Architect.

ornamental work, because buildings will ultimately largely obscure this side of the church; but, at present the structure can be viewed from a fair distance and judged as a whole. It is here noticeablfe that at the points where the three nave domes abut upon the walls, i. e., in the centre of each bay, a buttress is introduced surcharged with a heavy pinnacle, whereas the buttresses to the transverse arches dividing the bays are distinctly subordinate, probably because the line of thrust is there much lower.

Hence, the bays are not marked with the same emphasis usual to vaulted churches, but there is a statical reason for the departure.

It is at this point we ask ourselves whether the outline of the entire building is satisfactory, and I feel bound to answer in the negative. The long level lines of the parapets are unsatisfactory to eyes accustomed to frequent pinnacles and a steep roof. It may be that Wren did not desire the open balustrade at St. Paul's, but there we have at least a bold cornice to the walls and always the



THE UPPER PORTION OF THE STAIR TURRET FLANKING THE WEST END OF THE NAVE.

dome above. Here the domes are barely visible, being at a great elevation and only two-thirds of a hemisphere in height *internally*. Externally they are slightly less, being constructed of concrete 2 feet 6 inches thick at the springing, diminishing to 1 foot 6 inches at the crown. They are formed with external ribs, resting directly upon which are further coverings of granolithic slabs, allowing a free space for the circulation of air beneath. This prevents unequal expansion of the concrete consequent upon hot sunshine

without and cool air within. The doubt arises whether as outer shells were considered necessary it was advisable to make them of the same curvature nearly as that of the inner domes. Truth of expression would not really have been sacrificed had the outer domes greater rise, for, now, although the whole structure is based upon domical principles, from most points of view it appears to have a flat roof. It would not have been necessary to have had such an absolute contradiction of curve as in the case of those added to St. Mark's, Venice, to have presented in perspective a series of cupolas forming a worthy crown to so magnificent a nave.

An alternative would have been to have left the nave domes as at present and constructed a much loftier one above the sanctuary, thus emphasizing the position of the high altar, and adding to the skyline where it seems most wanting. It must be remembered, however, that the weight of such outer domes could not have been carried down to the springing of those beneath without the aid of timber and iron, and these materials have been excluded, from the nave at least, as too perishable. Then, too, there is the ever present consideration of cost. Outer domes might conceivably be added if the donor were forthcoming, as in the case of Brompton Oratory.

Very little has been said about the materials employed, and it is only proposed to refer to them in so far as they intimately affect the design. It is interesting to know of the millions of bricks used and the thousands of tons of Portland cement and sand, but such facts have been described elsewhere. The walls generally are faced with red bricks 2 inches deep only, but with wide mortar joints. The dressings, bands and copings are of Portland stone. The bricks are laid in a variety of ways, herringbone fashion, and even on end; they are introduced singly between stone voussoirs, used as label moulds, and take their turn among the orders of receding arches. Some in frequent use for arches are semicircular on face, and produce a series of graduated shadows, as shown in the last illustration. Green slates are used for timber roofs, but asphalted concrete holds undisputed sway over the greater part of the edifice. The glazing is set in leads of unusual width, and consists of bulls and and flat glass of a greenish yellow shade.

In conclusion, we feel that although most allusions to the new cathedral by the press have been distinctly unfavorable, we possess, at Westminster, a building which is likely to exercise a far greater influence on church design than any purely Classic or Gothic structure could have done at this stage of architectural evolution, and one which will occupy a more important place in the history of the styles than most of the buildings of the Gothic revival.

Fifteen years since, when the proposed cathedral at Liverpool was under consideration, a well-known architect suggested that the Byzantine phase of classic art was capable of far greater development than it had hitherto received. Within the last seven years Mr. Bentley has shown the truth of this statement at Westminster. Liverpool it still waiting and discussing. Should a competition of designs be held for the new cathedral on the Mersey, it will be surprising if the influence of Westminster be not then already visible, if only in the wide range of style considered applicable to a great church.

Mr. Bentley has come as near the development of a new style, as it is probable one man ever can, without the invention of some new method of construction. His Neo-Byzantine is as distinctive as the Neo-Romanesque of H. H. Richardson. The curious thing is, however, that whereas the latter consistently developed his favorite style through a long series of works, Mr. Bentley has hitherto given us examples of English Gothic, or English Renaissance, sometimes with suggestions of Flanders, or the Chateaux of the Loire; but not, so far as the writer is aware, anything approaching in construction or detail the character of the work under consideration. It is the artistic and inventive intellect of the man visible throughout the whole structure, which gives Westminster Cathedral its chief interest in the eyes of architects. The lay mind can scarcely be expected to detect this fully at first, but recognition of it must ultimately come to all who study the building with sympathy.

F. Herbert Mansford.

AN ART NOUVEAU CABINET.

THE ARCHITECT'S PORTFOLIO

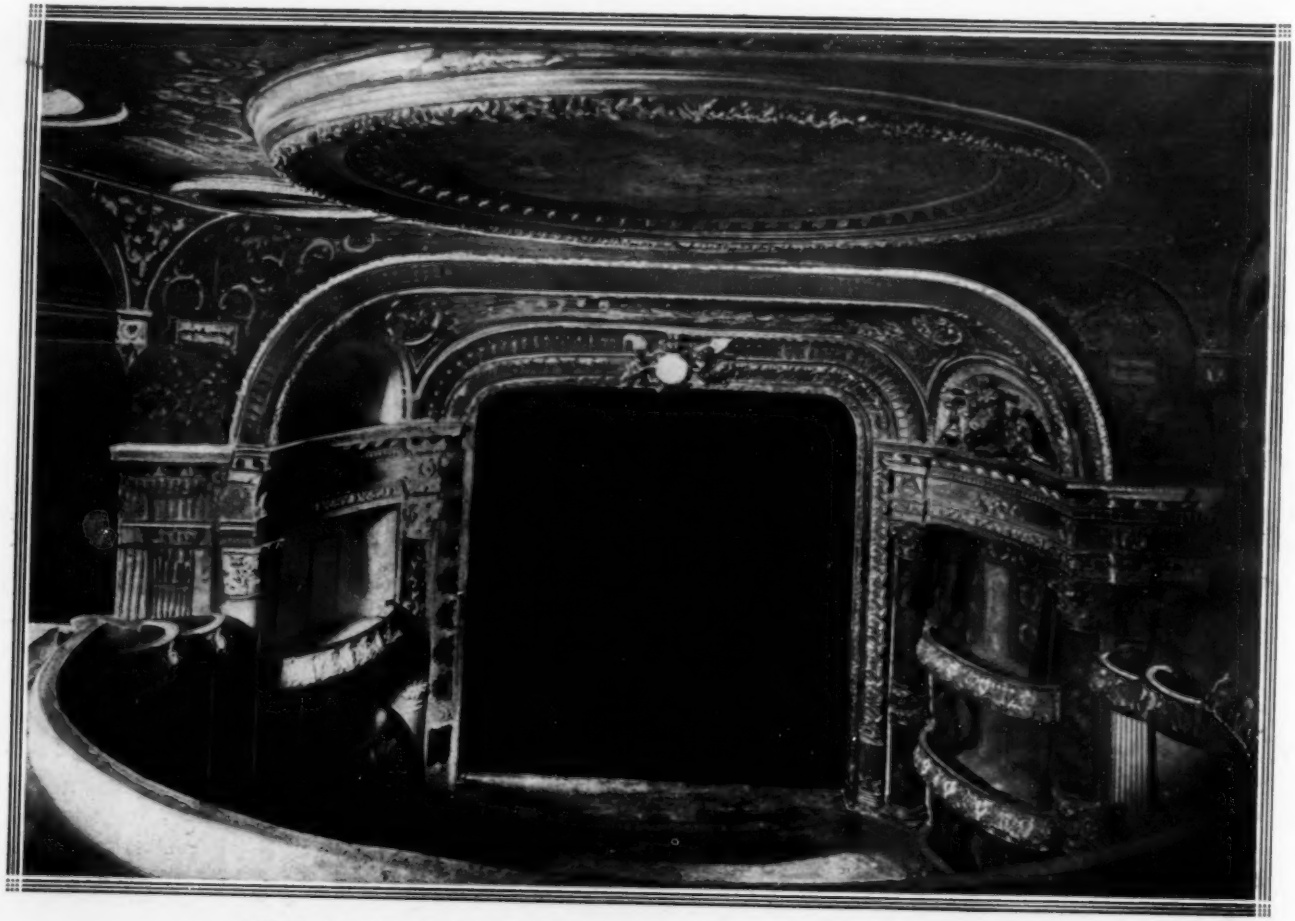
OF

RECENT AMERICAN ARCHITECTURE.

A CHRONICLE IN BLACK & WHITE

INTERIOR OF THE BOSTON MUSIC HALL ON MASSACHUSETTS AVENUE.

Boston, Mass. McKim, Mead & White, Architects.



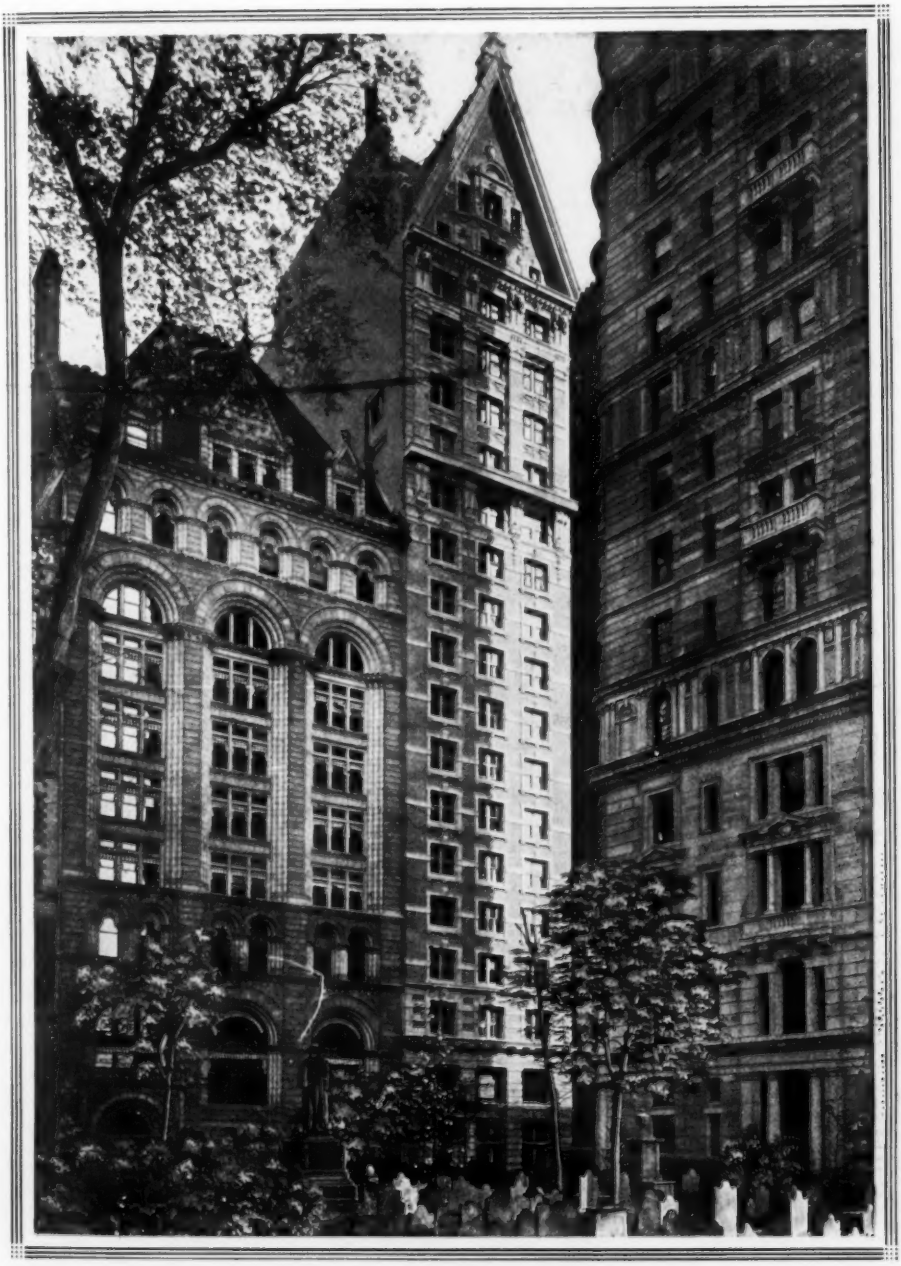
INTERIOR OF THE BOSTON MUSIC HALL ON MASSACHUSETTS AVENUE.

Boston, Mass.

McKim, Mead & White, Architects.

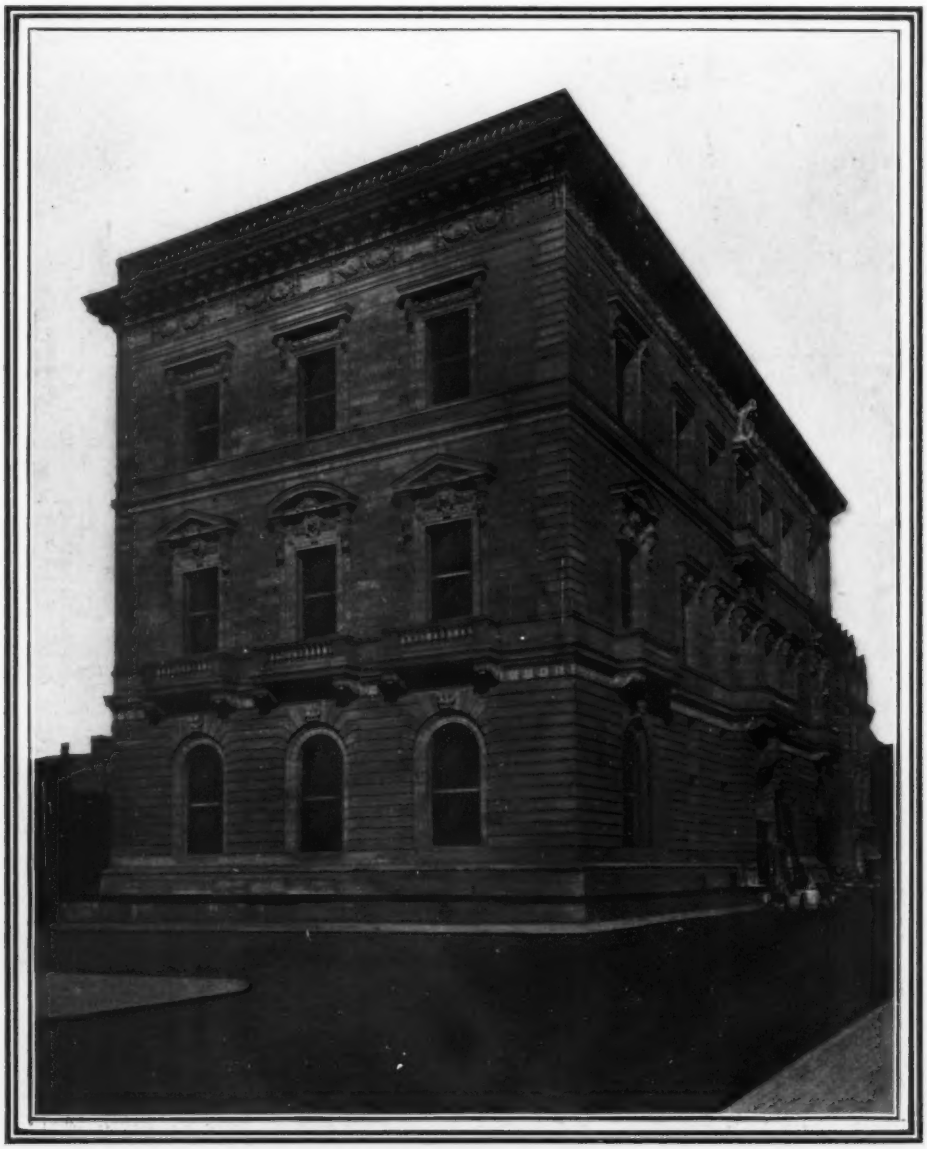
OFFICE BUILDING.

Southeast Corner of Broadway and Maiden Lane, New York City. Clinton & Russell, Architects.

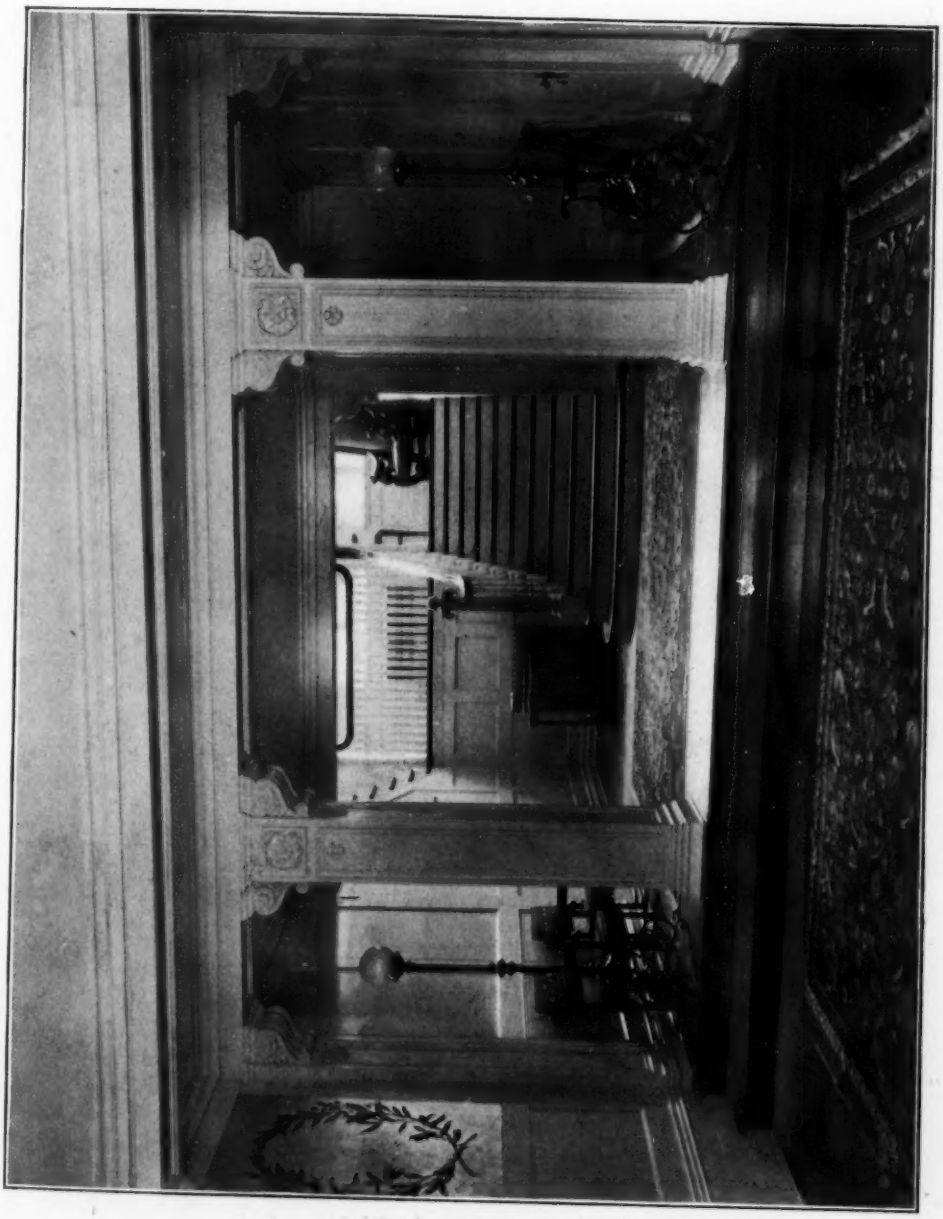


THE CENTURY BUILDING.

Nos. 72 and 74 Broadway, New York City. Bruce Price, Architect.



THE NEW BUILDING OF THE UNION CLUB.
Northeast Corner of Fifth Ave. and 51st St., New York City. Du Fais & Cass Gilbert, Architects.



HALLWAY IN THE RESIDENCE OF GIFFORD PINCHOT.

Dupont Circle, Washington, D. C. Heins & La Farge, Architects.

DINING-ROOM IN THE RESIDENCE OF GIFFORD PINCHOT.

Dupont Circle, Washington, D. C. Heins & La Farge, Architects.

LIBRARY IN THE RESIDENCE OF GIFFORD PINCHOT.

Dupont Circle, Washington, D. C.

Heins & La Farge, Architects.

Opinions Official and Unofficial.

A Museum of Photographs.

In the New York Evening Post and Nation there appeared recently an article favoring the creation by the New York Public Library, the Library of Congress, and others of our great libraries of "reference libraries of art reproductions" for the systematic study of art history. This article was inspired by, and quoted from, one of the lectures delivered by Sir W. Martin Conway as Slade Professor of Fine Art in the University of Cambridge, and now published by E. P. Dutton & Co., in a volume entitled, "The Domain of Art." Sir Martin had been recommending to his students the formation, by each, of a systematically arranged collection of photographs of works of art, and goes on to say: "What the individual student is thus recommended to do for himself on a small scale should be done for every historical art museum on as large a scale as possible. In short there is room for a great collection of reproductions of all the art of all the world, organically arranged in the manner I have thus suggested." What, in fine, he advocates is less the formation of reference collections by libraries or existing museums than the foundation of a special institution for the study of art history, a museum of photographs. The proposal is not a new one; Sir Martin had himself advocated it when art professor at Liverpool and, in this country, Mr. Kenyon Cox has discussed such a project at some length in an article published a good many years ago in the New York World. Several partial collections have already been formed, but nothing approaching completeness has been attempted.

It is hardly necessary to dwell upon the usefulness of such a museum to students of art. Modern criticism and modern connoisseurship are based almost entirely upon the facility of comparison of one work with another which is afforded by photography. A complete conspectus of the art of the world in photographic reproduction would be such an engine of scientific and historical art-study as the world has not yet seen. As many of the greatest works of art are immovable and many more are already the property of national museums, from which it is inconceivable that they should ever be removed, this country can never rival the old in the possession of the world's historic art treasures, and there is, therefore, for us an added reason for the creation of such a museum of reproductions. On the proper organization and arrangement

of such a museum we cannot do better than quote from Sir Martin Conway.

"To carry out the whole plan of such a museum," he says, "would not be so simple a matter as may at first appear. . . . In fact the collecting alone is a complicated work, but the arrangement of the collection would take far more time and would involve the collaboration and advice of many experts. The great age of Italian painting from Cimabue to Tiepolo might perhaps be fairly completely represented by 20,000 photographs of pictures and drawings. . . . That would enable us to produce a kind of illustrated index, chronologically classified, of all the chief paintings and drawings that have come down to us from the old Italian schools." This collection should be so arranged that the student, "by turning over the contents of a few boxes" should be able to study practically all the works of a given artist in the order of their production. "He would find the genuine pictures separated from others merely produced in the workshop under the master's eye. He would find a note on the margin of a doubtful picture. If it is attributed by critics of weight to some other artist he would find that fact stated, and he would likewise find a duplicate photograph included in that master's work. . . . The collection should be accompanied by one or more card catalogues . . . the cards, duplicated or triplicated if need be, might be grouped together according to any principle likely to be of use," so that, for instance, one might know where to find all pictures of a given subject.

Such would be the organization of a single section of the proposed museum. We would add the suggestion that duplicate photographs of the capital works of each school and master should be framed and hung upon the walls in chronological arrangement, so that the casual visitor should find a kind of panorama of art history before him without the labor of consulting catalogues or taking down boxes. It is here that the advantage of a special museum over a mere reference collection in a public library would be most conspicuous.

We think the writer in the Post and Nation has greatly underestimated the cost of such a museum. He takes Sir Martin's figures for Italian painting alone, £3,000, and allowing twice as much for all other schools of painting puts the cost of a complete collection for painting at $45,000, and concludes that "a gift of $100,000 would provide generously for the establishment and maintenance of a reference library of art reproductions." This is, of course, assuming that no separate building would be needed and but a small addition to the regular library staff, but even so it is far too low an estimate, for it takes no adequate account of sculpture

and architecture which would each cost as much as painting—architecture would probably cost far more. But not even with these three great arts would the ideal museum rest satisfied. To them should be added "mosaics, miniatures, bronzes, medals, embroideries, furniture, metal work," the art of the world. "The complete collection would begin with the simple implements and the engraved and carved bones of prehistoric times. It would follow down the stream of human activity through the polished stone age to the introduction of metals. It would reproduce the objects discovered by excavation on the most ancient Egyptian and Chaldean sites. It would bring together as complete a series as possible of the work of all kinds of artists in ancient Egypt, Babylonia, Assyria, China, Peru—in fact, of every country where art ever existed and enshrined the ideals of human aspiration. If such a museum of photographs were expanded to include casts of ivories and electrotype reproductions of small objects, such as coins, still more if it were linked to a large historical collection of casts, the result would be a museum, whose contents would indeed possess a relatively trifling intrinsic value, but whose utility as contributing to the increase of an understanding of the course of evolution of the human mind would surpass that of any existing institution. The proposal may seem a large one, but there is nothing impracticable in it. Though the sum of money ultimately required would no doubt be considerable, it would only be wanted in comparatively small amounts at a time. The main requisite would be skilful experts in sufficient number to organize and arrange the very cheap materials which already exist in countless multitudes."

The scheme *is* a large one, but it will surely be realized some day and somewhere. With our multi-millionaires searching for worthy uses for a part of their millions, what reason is there that its realization should not be begun here and now?

Cold Storages for Books.

The Mediaeval towns and cities of the twelfth and thirteenth centuries had their cathedrals or abbey-churches; the early Renaissance communes of the fifteenth and sixteenth centuries had their hotels de ville and rath-houses; it is in something the same way that the modern American towns and cities have their public libraries. The old centers of union and action no longer command undivided allegiance. The one church has disintegrated into many churches, a doubtful rationalistic moralism frequently taking the place of religion. The City Hall is not and cannot be to the same extent an object of single-minded and hearty devotion, not only because of

the bad odor of local politics, but also because the nation has been substituted for the commune as the chief center of political allegiance. The public library, on the other hand, stands for much that is best in an American community. Take, for instance, the case of New York. In order to bring the library machinery of that city into existence the rich, the comparatively poor and the community in its collective capacity have all contributed. The benefactions of Messrs. Astor, Lenox and Tilden laid the foundations, that of Andrew Carnegie broadened them, and a score of individuals have added their share in starting and supporting local borough libraries. The city itself has added to this total the cost of the central library building, and that of maintaining most of the branch libraries. Hence, when the service is established, it will represent a combination of private generosity and public spirit, persistently applied throughout half a century such as have contributed to the formation of no other local institution; and the Public Library Building in Bryant Park will symbolize some of the most deeply rooted and salutary ideals of the American democracy—its faith in education, in the power of ideas, and in the necessity of making these educational and intellectual influences broadly popular.

The change from the cathedral and the city hall to the public library as the symbol of the better life of a community may not be altogether commendable; but, in order to make the best of it, we must understand the public library as standing broadly for popular education and enlightenment. In itself, a library is only a collection of books, and there is not so much virtue in reading a book as many people imagine. The value of a library consists in the fact that it provides passive material upon which the active educational forces in a community may work. Consequently, libraries have been collected abroad chiefly as the necessary machinery of university work, or as repositories of the national literary and historical archives, which scholars may investigate and translate for the benefit of their fellow countrymen. In the United States, also, books have been accumulated for these purposes; but the object of the public library of to-day is obviously much less special and much more popular. Although not ignoring the scholar, it is aimed primarily to provide for the largest possible circulation of all kinds of books, and while the currency it gives to a vast mass of ephemeral and worthless print is as much of an evil as a good, still the active educational influences, disseminated by schools of all kinds, are sufficiently pervasive and powerful to make it an indispensable and valuable auxiliary in the great work of university extension. And just as the college library, instead of the chapel, is now the center around which the buildings of a university are grouped, so the public library incarnates the thousand invisible forces which are

making for the spread of useful information and liberal and humane ideas.

If public libraries do play as important a part in the modern American communities as that we have described above, it is obviously desirable that the buildings in which these libraries are housed should be impressive of the amount of this importance and expressive of its character. Here is surely a peculiar opportunity for the contemporary American architect. Mr. Carnegie and others are paying for new library buildings at the rate of hundreds every year. There is hardly a city or a respectably sized town in the country which has not just built, is not building or will soon build, such a structure—the one structure in the town which, as we have pointed out, commands undivided allegiance and unfailing, if somewhat lukewarm and impersonal, interest. What is the American architect doing with this opportunity? A special library number, recently published by the "Architectural Review," enables one to answer this question without taking any very extensive travels; but the answer must be, after a careful inspection of the many examples of recent buildings which the number furnishes, that they are not doing very much. In making this answer, we frankly ignore that part of the design of such a building which is of primary interest to the designer. The interior arrangement of the modern American libraries are in most cases managed with great ingenuity, and are admirably adapted, as many of the earlier American libraries were not, to the convenient circulation and economical storing of a larger or smaller number of books. But however successfully these buildings are being planned, little or no headway has been made toward the development of a design, or of a type of design, which is appropriate to a library and which will tend to make them familiar and inviting to the people who use them.

The majority of the designs figured in the special number mentioned above are merely frigid examples of neo-classic school-pieces. They look as if the architects, emancipated from the restraints under which they usually suffer in designing commercial buildings and residences, were irresistibly impelled to draw façades such as they are frequently obliged to draw during their school training, and so they get up some commonplace arrangement of columns, a pediment, varied by arched or square openings, and flatly monotonous and uninteresting. No more depressing exposure could be conceived of the imitative and academic character of American design, and its inability when dealing with a fresh and interesting problem to treat it in a fresh and interesting way.

A library is a place in which books are stored, and to which men go to read them in quiet and leisurely surroundings, and this description applies as well to public as to private libraries. The former

necessarily possess more spacious dimensions and more abundant facilities for the circulation of people and books; but the condition remains that it is the reading-room which, from the point of view of the public, gives the building its character and associations. But a reading-room is much more closely related to domestic architecture than it is to that of Senate and Court Houses. It is used by private people for their own private purposes, and not by public officials, whose duty it is to enact, execute and expound the laws, and the design of a building in which such a reading-room is situated should be domestic, familiar and inviting—the sort of a building in which a man would go to read, and not to deliver an oration or to hand down a judicial decision. What, then, could be less appropriate than these frigidly and meaninglessly classical buildings, which have no associations with books, and which are entirely lacking in the atmosphere of quiet and retirement which is essential to any and all kinds of a library. It is, of course, difficult and even impossible to get in a building of very large dimensions the effect and atmosphere mentioned above. A more stately and important air is not incongruous with the public library of a large city. This stateliness and importance need not indeed afford an excuse for an academic formalism of treatment, but it inevitably subtracts from the domestic atmosphere appropriate to a smaller library building. The consequence is that the more expensive structures in the larger cities tend to be the best, not only because they are usually designed by more skillful architects, but also because the prevailing classic and Renaissance treatment is better adapted to a building of ample dimensions and imposing situation. In the smaller buildings, however, the architects, under the influence of their academic training and imitative methods, have gone utterly astray. They have designed merely a collection of marble and granite cold-storages for books, under the erroneous idea that everything public must be classical and irrelevant, and one of the most discouraging aspects of the matter is that in cases of competitions it was frequently the most stiff and wintry design of all which was selected. Mr. Carnegie could not perform a better service for American architecture than by placing the supervision of the designs of all the libraries for which he is paying in the hands of a well-chosen group of architects, who would have it in their power to emancipate the designing of small libraries from the colorless and meaningless formula which now prevails. Fortunately, this step has already been taken in case of the branch libraries in New York City.

THE OCTAGON, ELY CATHEDRAL.

THE ARCHITECT'S LIBRARY

THE ARCHITECTURAL ANNUAL. Edited by Albert Kelsey. Folio. Issued for 1901. Pp. 302. Philadelphia: The Architectural Annual.

"The Architectural Annual" for 1901, which has just made its somewhat belated appearance, has what may be called a "syllabic" dedication. It is dedicated—to express in figures the rounded periods: I., To the Architectural League of America, "the embodiment of an earnest aspiration for the advancement of American architecture as distinguished from the promotion of architectural practice;" (1), To the League's national committee on municipal art; and (2), To Mr. Cass Gilbert, the committee's first chairman. It is dedicated, II., To the American Institute of Architects; and III., To Congress. The dedicatory sentences explain that "I." is chosen because, with its sub-heads, representing "the initiators of the movement for the organized improvement of city making;" "II." because to its re-enforcement are "due the most notable specific results" yet obtained; and "III." in acknowledgment of "the wise appointment af an incomparable commission to study and report upon the future development of the national capital."

This dedication is important. It indicates the scope of the volume, its special interest, and its aim. There is set up by it the standard by which the volume should be judged—the true standard, apart from all such material attractions as profuse, pertinent, interesting and beautiful illustration; as fine paper, clear type, and those various excellences of manufacture and arrangement which adorn the book, and which, indeed, do something more even than add to its attractiveness, because also increasing its value as at once a treasury of information and an incentive to continued progress along the lines of civic art. The dedication shows what was in the mind of the editor, what was the goal he had set before himself, in the pursuit of which all these other things were incidental—what was the end to which they were to be the material means. Obviously, "The Architectural Annual" for 1901 is not, then, to be judged solely as an architectural work. It has launched into a field that has been less exploited, that is now developing so rapidly that it sorely needs an annual chronicler, that has a slenderer past than has architecture, but a future that may be amazing, that makes its appeal not to a profession only but to all the dwellers in organized communities. For "The Architectural Annual" promises, in the "Announcement," which supplements its dedication, that "year by year it will be enlarged and enriched to reflect the birth and growth of organic city-making in the United States." If, because its editor is an architect, because it is dedicated to the great national associations of architects, and because it has adopted an architectural title, it approaches this many-sided subject from the architect's point of view, it has, then, done all that the architect ought to ask. And it does this singularly well, so providing him with a record that in like completeness he has nowhere else. Reporting year by year and "step by step" the "civic improvements at home and abroad" most notable from the standpoint of the progressive, the public-spirited, and the broad-minded architect, it has a function all its own and of extreme importance.

The current Annual is the second to appear, and it shows distinct improvement over its predecessor. This is especially notable in the first score or more of pages, which are editorial. They are divided into a multitude of brief, pungent, earnest articles, hardly averaging more than 300 words apiece. Even the busy reader has time to look at these, and in each he finds crystallized a thought that repays him for the perusal. Between each article and

the one that follows is a short and pertinent quotation, printed in italics, and incidentally relieving the monotony of a large double-columned page. The sources whence these phrases come range from Emerson to Roosevelt, from Matthew Arnold to the Springfield "Republican," from Goethe to the late Mayor Bolton of Ohio! It is not so much who says the thing as the thing he says that counts; and it is worth a note, since architects do not pretend to be builders of phrases, that the profession is well represented. There are quotations from, for example, Sullivan of Chicago, Carrère of New York, Atchison of London, and Benard of France.

After the editorials there is printed in full the annual address of Robert S. Peabody, as President of the American Institute of Architects, 1900. Then come several pages illustrating the competitive models for the national Maine monument; and then an illustrated article on the work of Louis H. Sullivan, whose portrait forms the frontispiece of the volume. Following this there are a number of articles (for the most part reprints) on phrases of civic improvement effort, and a multitude of interesting pictures illustrating work projected, under way, or accomplished, large and small. The Annual presents by this means an extremely interesting and valuable compilation of articles that have not before appeared in the architectural press, and that, scattered widely through the newspaper and general periodical literature of the day, has been buried to most architects; and that has, certainly, lacked heretofore, much of its significance for want of a sympathetic environment and of any illustration—now lavish and intelligent. And the value of these illustrations is immensely increased, and the pictures are made to the layman instructive, by printing beneath the more important of them brief comments, appreciations and criticisms from the artistic standpoint, that indicate with full assurance and trained judgment their principal merits and defects.

If one would make criticism of the book, it is that in these pictures—which should offer an illustrated history of the progress of civic art during the year—there is too little space given to public buildings. The answer may be that these are too seldom "art;" but a current statement that the gifts for public library structures alone during the last few months have exceeded thirteen millions of dollars, suggests that if there be little which is good in the designs that have been made to carry out the purpose of these gifts, it would be well to show some bad designs that the negligence of so remarkable a civic opportunity may be appreciated. But the pictures chosen cover a wide range, both in subject and in geography, and offer a review that will doubtless be generally satisfactory.

At the end of the volume there is a "Directory," in which are noted the two leading national associations for general civic improvement work, the architectural publications of the United States—with a few words of description and fearless comment for each of these; and a review of the leading books of the year that are pertinent to the subject of town and city improvement.

The publication as a whole reflects, thus, great credit on its editor. It is a satisfaction to learn that already the volume which preceded it is at a premium. The main general fault with the present issue is one that can be easily remedied another year, and that, meanwhile, even enhances the value of the volume. It is that its edition is limited to one thousand (numbered) copies, printed from movable types. The demand for the work should justify an edition several times as large as this, and if the established standard of excellence can be maintained the demand will come, and come imperatively. The movement of which the Annual is the exponent is striding forward tremendously, and to none does this progress mean more than to architects.